

ORIGINAL

SUBCHAPTER C—HAZARDOUS MATERIALS REGULATIONS

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

U.S.C. 2461 note); Pub. L. 104-134 section 31001.

EDITORIAL NOTE: Nomenclature changes to part 171 appear at 70 FR 56090, Sept. 23, 2005.

Sec.

Subpart A—Applicability, General Requirements, and North American Shipments

Subpart A—Applicability, General Requirements, and North American Shipments

- 171.1 Applicability of Hazardous Materials Regulations (HMR) to persons and functions.
- 171.2 General requirements.
- 171.3 Hazardous waste.
- 171.4 Marine pollutants.
- 171.6 Control numbers under the Paperwork Reduction Act.
- 171.7 Reference material.
- 171.8 Definitions and abbreviations.
- 171.9 Rules of construction.
- 171.10 Units of measure.
- 171.11 [Reserved]
- 171.12 North American Shipments.
- 171.12a [Reserved]
- 171.14 Transitional provisions for implementing certain requirements.

§171.1 Applicability of Hazardous Materials Regulations (HMR) to persons and functions.

Federal hazardous materials transportation law (49 U.S.C. 5101 *et seq.*) directs the Secretary of Transportation to establish regulations for the safe and secure transportation of hazardous materials in commerce, as the Secretary considers appropriate. The Secretary is authorized to apply these regulations to persons who transport hazardous materials in commerce. In addition, the law authorizes the Secretary to apply these regulations to persons who cause hazardous materials to be transported in commerce. The law also authorizes the Secretary to apply these regulations to persons who manufacture or maintain a packaging or a component of a packaging that is represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce. Federal hazardous material transportation law also applies to anyone who indicates by marking or other means that a hazardous material being transported in commerce is present in a package or transport conveyance when it is not, and to anyone who tampers with a package or transport conveyance used to transport hazardous materials in commerce or a required marking, label, placard, or shipping description. Regulations prescribed in accordance with Federal hazardous materials transportation law shall govern safety aspects, including security, of the transportation of hazardous materials that the Secretary considers appropriate. In 49 CFR 1.53, the Secretary delegated authority to issue regulations for the safe and secure transportation of hazardous materials in commerce to the Pipeline and Hazardous

Subpart B—Incident Reporting, Notification, BOE Approvals and Authorization

- 171.15 Immediate notice of certain hazardous materials incidents.
- 171.16 Detailed hazardous materials incident reports.
- 171.17-171.18 [Reserved]
- 171.19 Approvals or authorizations issued by the Bureau of Explosives.
- 171.20 Submission of Examination Reports.
- 171.21 Assistance in investigations and special studies.

Subpart C—Authorization and Requirements for the Use of International Transport Standards and Regulations

- 171.22 Authorization and conditions for the use of international standards and regulations.
- 171.23 Requirements for specific materials and packagings transported under the ICAO Technical Instructions, IMDG Code, Transport Canada TDG Regulations, or the IAEA Regulations.
- 171.24 Additional requirements for the use of the ICAO Technical Instructions.
- 171.25 Additional requirements for the use of the IMDG Code.
- 171.26 Additional requirements for the use of the IAEA Regulations.

AUTHORITY: 49 U.S.C. 5101-5128, 44701; 49 CFR 1.45 and 1.53; Pub. L. 101-410 section 4 (28

Materials Safety Administrator. The Administrator issues the Hazardous Materials Regulations (HMR; 49 CFR Parts 171 through 180) under that delegated authority. This section addresses the applicability of the HMR to packagings represented as qualified for use in the transportation of hazardous materials in commerce and to pre-transportation and transportation functions.

(a) *Packagings.* Requirements in the HMR apply to each person who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a packaging or a component of a packaging that is represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce, including each person under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a packaging or a component of a packaging that is represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce.

(b) *Pre-transportation functions.* Requirements in the HMR apply to each person who offers a hazardous material for transportation in commerce, causes a hazardous material to be transported in commerce, or transports a hazardous material in commerce and who performs or is responsible for performing a pre-transportation function, including each person performing pre-transportation functions under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government. Pre-transportation functions include, but are not limited to, the following:

(1) Determining the hazard class of a hazardous material.

(2) Selecting a hazardous materials packaging.

(3) Filling a hazardous materials packaging, including a bulk packaging.

(4) Securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material.

(5) Marking a package to indicate that it contains a hazardous material.

(6) Labeling a package to indicate that it contains a hazardous material.

(7) Preparing a shipping paper.

(8) Providing and maintaining emergency response information.

(9) Reviewing a shipping paper to verify compliance with the HMR or international equivalents.

(10) For each person importing a hazardous material into the United States, providing the shipper with timely and complete information as to the HMR requirements that will apply to the transportation of the material within the United States.

(11) Certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR.

(12) Loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle.

(13) Segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo.

(14) Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.

(c) *Transportation functions.* Requirements in the HMR apply to transportation of a hazardous material in commerce and to each person who transports a hazardous material in commerce, including each person under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government who transports a hazardous material in commerce. Transportation of a hazardous material in commerce begins when a carrier takes physical possession of the hazardous material for the purpose of transporting it and continues until the package containing the hazardous material is delivered to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a rail car, until the car is delivered to a private track or siding. For a private motor carrier, transportation of a hazardous material in commerce begins when a motor vehicle driver takes possession of a hazardous

material for the purpose of transporting it and continues until the driver relinquishes possession of the package containing the hazardous material at its destination and is no longer responsible for performing functions subject to the HMR with respect to that particular package. Transportation of a hazardous material in commerce includes the following:

(1) *Movement.* Movement of a hazardous material by rail car, aircraft, motor vehicle, or vessel (except as delegated by Department of Homeland Security Delegation No. 0170 at 2(103)).

(2) *Loading incidental to movement of a hazardous material.* Loading of packaged or containerized hazardous material onto a transport vehicle, aircraft, or vessel for the purpose of transporting it, including blocking and bracing a hazardous materials package in a freight container or transport vehicle, and segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo, when performed by carrier personnel or in the presence of carrier personnel. For a bulk packaging, loading incidental to movement is filling the packaging with a hazardous material for the purpose of transporting it when performed by carrier personnel or in the presence of carrier personnel (except as delegated by Department of Homeland Security Delegation No. 0170 at 2(103)), including transloading.

(3) *Unloading incidental to movement of a hazardous material.* Removing a package or containerized hazardous material from a transport vehicle, aircraft, or vessel; or for a bulk packaging, emptying a hazardous material from the bulk packaging after the hazardous material has been delivered to the consignee when performed by carrier personnel or in the presence of carrier personnel or, in the case of a private motor carrier, while the driver of the motor vehicle from which the hazardous material is being unloaded immediately after movement is completed is present during the unloading operation. (Emptying a hazardous material from a bulk packaging while the packaging is on board a vessel is subject to separate regulations as delegated by Department of Homeland Security Delegation No. 0170 at 2(103).)

Unloading incidental to movement includes transloading.

(4) *Storage incidental to movement of a hazardous material.* Storage of a transport vehicle, freight container, or package containing a hazardous material by any person between the time that a carrier takes physical possession of the hazardous material for the purpose of transporting it until the package containing the hazardous material has been delivered to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a private motor carrier, between the time that a motor vehicle driver takes physical possession of the hazardous material for the purpose of transporting it until the driver relinquishes possession of the package at its destination and is no longer responsible for performing functions subject to the HMR with respect to that particular package.

(i) Storage incidental to movement includes—

(A) Storage at the destination shown on a shipping document, including storage at a transloading facility, provided the original shipping documentation identifies the shipment as a through-shipment and identifies the final destination or destinations of the hazardous material; and

(B) A rail car containing a hazardous material that is stored on track that does not meet the definition of "private track or siding" in §171.8, even if the car has been delivered to the destination shown on the shipping document.

(ii) Storage incidental to movement does not include storage of a hazardous material at its final destination as shown on a shipping document.

(d) *Functions not subject to the requirements of the HMR.* The following are examples of activities to which the HMR do not apply:

(1) Storage of a freight container, transport vehicle, or package containing a hazardous material at an offeror facility prior to a carrier taking possession of the hazardous material for movement in transportation in commerce or, for a private motor carrier, prior to a motor vehicle driver

taking physical possession of the hazardous material for movement in transportation in commerce.

(2) Unloading of a hazardous material from a transport vehicle or a bulk packaging performed by a person employed by or working under contract to the consignee following delivery of the hazardous material by the carrier to its destination and departure from the consignee's premises of the carrier's personnel or, in the case of a private carrier, departure of the driver from the unloading area.

(3) Storage of a freight container, transport vehicle, or package containing a hazardous material after its delivery by a carrier to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a rail car, storage of a rail car on private track.

(4) Rail and motor vehicle movements of a hazardous material exclusively within a contiguous facility boundary where public access is restricted, except to the extent that the movement is on or crosses a public road or is on track that is part of the general railroad system of transportation, unless access to the public road is restricted by signals, lights, gates, or similar controls.

(5) Transportation of a hazardous material in a motor vehicle, aircraft, or vessel operated by a Federal, state, or local government employee solely for noncommercial Federal, state, or local government purposes.

(6) Transportation of a hazardous material by an individual for non-commercial purposes in a private motor vehicle, including a leased or rented motor vehicle.

(7) Any matter subject to the postal laws and regulations of the United States.

(e) *Requirements of other Federal agencies.* Each facility at which pre-transportation or transportation functions are performed in accordance with the HMR may be subject to applicable standards and regulations of other Federal agencies.

(f) *Requirements of state and local government agencies.* (1) Under 49 U.S.C. 5125, a requirement of a state, political subdivision of a state, or an Indian tribe is preempted, unless otherwise

authorized by another Federal statute or DOT issues a waiver of preemption, if—

(i) Complying with both the non-Federal requirement and Federal hazardous materials transportation law, the regulations issued under Federal hazardous material transportation law or a hazardous material transportation security regulation or directive issued by the Secretary of Homeland Security is not possible;

(ii) The non-Federal requirement, as applied or enforced, is an obstacle to accomplishing and carrying out Federal hazardous materials transportation law, the regulations issued under Federal hazardous material transportation law, or a hazardous material transportation security regulation or directive issued by the Secretary of Homeland Security;

(iii) The non-Federal requirement is not substantively the same as a provision of Federal hazardous materials transportation law, the regulations issued under Federal hazardous material transportation law, or a hazardous material transportation security regulation or directive issued by the Secretary of Homeland Security with respect to—

(A) The designation, description, and classification of hazardous material;

(B) The packing, repacking, handling, labeling, marking, and placarding of hazardous material;

(C) The preparation, execution, and use of shipping documents related to hazardous material and requirements related to the number, contents, and placement of those documents;

(D) The written notification, recording, and reporting of the unintentional release of hazardous material; or

(E) The design, manufacturing, fabricating, marking, maintenance, reconditioning, repairing, or testing of a package or container represented, marked, certified, or sold as qualified for use in transporting hazardous material.

(iv) A non-Federal designation, limitation or requirement on highway routes over which hazardous material may or may not be transported does not comply with the regulations in subparts C and D of part 397 of this title; or

§ 171.2

(v) A fee related to the transportation of a hazardous material is not fair or is used for a purpose that is not related to transporting hazardous material, including enforcement and planning, developing, and maintaining a capability for emergency response.

(2) Subject to the limitations in paragraph (f)(1) of this section, each facility at which functions regulated under the HMR are performed may be subject to applicable laws and regulations of state and local governments and Indian tribes.

(3) The procedures for DOT to make administrative determinations of preemption are set forth in subpart E of part 397 of this title with respect to non-Federal requirements on highway routing (paragraph (f)(1)(iv) of this section) and in subpart C of part 107 of this chapter with respect to all other non-Federal requirements.

(g) *Penalties for noncompliance.* Each person who knowingly violates a requirement of the Federal hazardous material transportation law, an order issued under Federal hazardous material transportation law, subchapter A of this chapter, or a special permit or approval issued under subchapter A or C of this chapter is liable for a civil penalty of not more than \$55,000 and not less than \$250 for each violation, except the maximum civil penalty is \$110,000 if the violation results in death, serious illness or severe injury to any person or substantial destruction of property, and a minimum \$495 civil penalty applies to a violation relating to training. When a violation is a continuing one and involves transporting of hazardous material or causing them to be transported, each day of the violation is a separate offense. Each person who knowingly violates §171.2(l) or willfully or recklessly violates a provision of the Federal hazardous material transportation law, an order issued under Federal hazardous material transportation law, subchapter A of this chapter, or a special permit or approval issued under subchapter A or C of this chapter, shall be fined under title 18, United States Code, or imprisoned for not more than 5 years, or both, except the maximum amount of imprisonment shall be 10 years in any case in which a violation

49 CFR Ch. I (10–1–10 Edition)

involves the release of a hazardous material which results in death or bodily injury to any person.

[68 FR 61937, Oct. 30, 2003; 70 FR 20031, Apr. 15, 2005, as amended at 70 FR 73162, Dec. 9, 2005; 71 FR 8488, Feb. 17, 2006; 71 FR 44931, Aug. 8, 2006; 74 FR 68702, Dec. 29, 2009; 75 FR 53596, Sept. 1, 2010]

§ 171.2 General requirements.

(a) Each person who performs a function covered by this subchapter must perform that function in accordance with this subchapter.

(b) Each person who offers a hazardous material for transportation in commerce must comply with all applicable requirements of this subchapter, or an exemption or special permit, approval, or registration issued under this subchapter or under subchapter A of this chapter. There may be more than one offeror of a shipment of hazardous materials. Each offeror is responsible for complying with the requirements of this subchapter, or an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter, with respect to any pre-transportation function that it performs or is required to perform; however, each offeror is responsible only for the specific pre-transportation functions that it performs or is required to perform, and each offeror may rely on information provided by another offeror, unless that offeror knows or, a reasonable person, acting in the circumstances and exercising reasonable care, would have knowledge that the information provided by the other offeror is incorrect.

(c) Each person who performs a function covered by or having an effect on a specification or activity prescribed in part 178, 179, or 180 of this subchapter, an approval issued under this subchapter, or an exemption or special permit issued under subchapter A of this chapter, must perform the function in accordance with that specification, approval, an exemption or special permit, as appropriate.

(d) No person may offer or accept a hazardous material for transportation in commerce or transport a hazardous material in commerce unless that person is registered in conformance with

subpart G of part 107 of this chapter, if applicable.

(e) No person may offer or accept a hazardous material for transportation in commerce unless the hazardous material is properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements of this subchapter or an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter.

(f) No person may transport a hazardous material in commerce unless the hazardous material is transported in accordance with applicable requirements of this subchapter, or an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter. Each carrier who transports a hazardous material in commerce may rely on information provided by the offeror of the hazardous material or a prior carrier, unless the carrier knows or, a reasonable person, acting in the circumstances and exercising reasonable care, would have knowledge that the information provided by the offeror or prior carrier is incorrect.

(g) No person may represent, mark, certify, sell, or offer a packaging or container as meeting the requirements of this subchapter governing its use in the transportation of a hazardous material in commerce unless the packaging or container is manufactured, fabricated, marked, maintained, reconditioned, repaired, and retested in accordance with the applicable requirements of this subchapter. No person may represent, mark, certify, sell, or offer a packaging or container as meeting the requirements of an exemption, a special permit, approval, or registration issued under this subchapter or subchapter A of this chapter unless the packaging or container is manufactured, fabricated, marked, maintained, reconditioned, repaired, and retested in accordance with the applicable requirements of the exemption, special permit, approval, or registration issued under this subchapter or subchapter A of this chapter. The requirements of this paragraph apply whether or not the packaging or container is used or

to be used for the transportation of a hazardous material.

(h) The representations, markings, and certifications subject to the prohibitions of paragraph (g) of this section include:

(1) Specification identifications that include the letters "ICC", "DOT", "CTC", "MC", or "UN";

(2) Exemption, special permit, approval, and registration numbers that include the letters "DOT", "EX", "M", or "R"; and

(3) Test dates associated with specification, registration, approval, retest, exemption, or special permit markings indicating compliance with a test or retest requirement of the HMR, or an exemption, special permit, approval, or registration issued under the HMR or under subchapter A of this chapter.

(i) No person may certify that a hazardous material is offered for transportation in commerce in accordance with the requirements of this subchapter unless the hazardous material is properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements of this subchapter or an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter. Each person who offers a package containing a hazardous material for transportation in commerce in accordance with the requirements of this subchapter or an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter, must assure that the package remains in condition for shipment until it is in the possession of the carrier.

(j) No person may, by marking or otherwise, represent that a container or package for transportation of a hazardous material is safe, certified, or in compliance with the requirements of this chapter unless it meets the requirements of all applicable regulations issued under Federal hazardous material transportation law.

(k) No person may, by marking or otherwise, represent that a hazardous material is present in a package, container, motor vehicle, rail car, aircraft, or vessel if the hazardous material is not present.

§ 171.3

49 CFR Ch. I (10-1-10 Edition)

(l) No person may alter, remove, deface, destroy, or otherwise unlawfully tamper with any marking, label, placard, or description on a document required by Federal hazardous material transportation law or the regulations issued under Federal hazardous material transportation law. No person may alter, deface, destroy, or otherwise unlawfully tamper with a package, container, motor vehicle, rail car, aircraft, or vessel used for the transportation of hazardous materials.

(m) No person may falsify or alter an exemption or special permit, approval, registration, or other grant of authority issued under this subchapter or subchapter A of this chapter. No person may offer a hazardous material for transportation or transport a hazardous material in commerce under an exemption or special permit, approval, registration or other grant of authority issued under this subchapter or subchapter A of this chapter if such grant of authority has been altered without the consent of the issuing authority. No person may represent, mark, certify, or sell a packaging or container under an exemption or special permit, approval, registration or other grant of authority issued under this subchapter or subchapter A of this chapter if such grant of authority has been altered without the consent of the issuing authority.

[68 FR 61937, Oct. 30, 2003, as amended at 70 FR 43643, July 28, 2005; 70 FR 73162, Dec. 9, 2005]

§ 171.3 Hazardous waste.

(a) No person may offer for transportation or transport a hazardous waste (as defined in §171.8 of this subchapter) in interstate or intrastate commerce except in accordance with the requirements of this subchapter.

(b) No person may accept for transportation, transport, or deliver a hazardous waste for which a manifest is required unless that person:

(1) Has marked each motor vehicle used to transport hazardous waste in accordance with §390.21 of this title even though placards may not be required;

(2) Complies with the requirements for manifests set forth in §172.205 of this subchapter; and

(3) Delivers, as designated on the manifest by the generator, the entire quantity of the waste received from the generator or a transporter to:

(i) The designated facility or, if not possible, to the designated alternate facility;

(ii) The designated subsequent carrier; or

(iii) A designated place outside the United States.

NOTE: Federal law specifies penalties up to \$250,000 fine for an individual and \$500,000 for a company and 5 years imprisonment for the willful discharge of hazardous waste at other than designated facilities. 49 U.S.C. 5124.

(c) If a discharge of hazardous waste or other hazardous material occurs during transportation, and an official of a State or local government or a Federal agency, acting within the scope of his official responsibilities, determines that immediate removal of the waste is necessary to prevent further consequence, that official may authorize the removal of the waste without the preparation of a manifest. [NOTE: In such cases, EPA does not require carriers to have EPA identification numbers.]

NOTE 1: EPA requires shippers (generators) and carriers (transporters) of hazardous wastes to have identification numbers which must be displayed on hazardous waste manifests. See 40 CFR parts 262 and 263. (Identification number application forms may be obtained from EPA regional offices.)

NOTE 2: In 40 CFR part 263, the EPA sets forth requirements for the cleanup of releases of hazardous wastes.

[Amdt. 171-53, 45 FR 34586, May 22, 1980, as amended by Amdt. 171-53, 45 FR 74648, Nov. 10, 1980; Amdt. 171-78, 49 FR 10510, Mar. 20, 1984; Amdt. 171-107, 54 FR 40068, Sept. 29, 1989; Amdt. 171-111, 55 FR 52466, Dec. 21, 1990; 56 FR 66157, Dec. 20, 1991; Amdt. 171-2, 59 FR 49132, Sept. 26, 1994; Amdt. 171-141, 61 FR 21102, May 9, 1996; 73 FR 57004, Oct. 1, 2008]

§ 171.4 Marine pollutants.

(a) Except as provided in paragraph (c) of this section, no person may offer for transportation or transport a marine pollutant, as defined in §171.8, in intrastate or interstate commerce except in accordance with the requirements of this subchapter.

(b) The requirements of this subchapter for the transportation of marine pollutants are based on the provisions of Annex III of the 1973 International Convention for Prevention of Pollution from Ships, as modified by the Protocol of 1978 (MARPOL 73/78).

(c) *Exceptions.* Except when all or part of the transportation is by vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft.

[Amdt. 171-116, 57 FR 52934, Nov. 5, 1993, as amended by Amdt. 107-39, 61 FR 51337, Oct. 1, 1996; 73 FR 4712, Jan. 28, 2008]

§ 171.6 Control numbers under the Paperwork Reduction Act.

(a) *Purpose and scope.* This section collects and displays the control numbers assigned to the HMR collections of information by the Office of Management and Budget (OMB) under the Pa-

perwork Reduction Act of 1995. This section complies with the requirements of 5 CFR 1320.7(f), 1320.12, 1320.13 and 1320.14 (OMB regulations implementing the Paperwork Reduction Act of 1995) for the display of control numbers assigned by OMB to collections of information of the HMR.

(b) *OMB control numbers.* The table in paragraph (b)(2) of this section sets forth the control numbers assigned to collection of information in the HMR by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995.

(1) Column 1 lists the OMB control number assigned to the HMR collections of information. Column 2 contains the Report Title of the approved collection of information. Column 3 lists the part(s) or section(s) in 49 CFR identified or described in the collection of information.

(2) Table.

Current OMB control No.	Title	Title 49 CFR part or section where identified and described
2137-0014	Cargo Tank Specification Requirements	§§ 107.503, 107.504, 178.320, 178.337, 178.338, 178.345, 180.407, 180.409, 180.413, 180.417.
2137-0018	Inspection and Testing of Portable Tanks and Intermediate Bulk Containers.	§§ 173.24, 173.32, 178.3, 178.255, 178.273, 178.274, 178.703, 178.801, 180.352, 180.605.
2137-0022	Testing, Inspection, and Marking Requirements for Cylinders.	§§ 173.5b, 173.302a, 173.303, 173.304, 173.309, 178.2, 178.3, 178.35, 178.44, 178.45, 178.46, 178.57, 178.59, 178.60, 178.61, 178.68, 180.205, 180.207, 180.209, 180.211, 180.213, 180.215, 180.217, Appendix C to Part 180.
2137-0034	Hazardous Materials Shipping Papers and Emergency Response Information.	§§ 172.200, 172.201, 172.202, 172.203, 172.204, 172.505, 172.600, 172.602, 172.604, 172.606, 173.6, 173.7, 173.22, 173.56, 174.24, 174.26, 174.114, 175.30, 175.31, 175.33, 176.24, 176.27, 176.30, 176.36, 176.89, 177.817.
2137-0039	Hazardous Materials Incidents Reports	§§ 171.15, 171.16, 171.21.
2137-0051	Rulemaking and Special Permit Petitions	§§ 105.30, 105.40, 106.95, 106.110, 107.105, 107.107, 107.109, 107.113, 107.117, 107.121, 107.123, 107.125, 107.205, 107.211, 107.215, 107.217, 107.219, 107.221, 107.223.
2137-0510	RAM Transportation Requirements	Part 173, Subpart I, §§ 173.22, 173.411, 173.415, 173.416, 173.417, 173.457, 173.471, 173.472, 173.473, 173.476.
2137-0542	Flammable Cryogenic Liquids	§§ 173.318, 177.816, 177.840, 180.405.

§ 171.7

49 CFR Ch. I (10-1-10 Edition)

Current OMB control No.	Title	Title 49 CFR part or section where identified and described
2137-0557	Approvals for Hazardous Materials	§§ 107.402, 107.403, 107.405, 107.502, 107.503, 107.705, 107.713, 107.715, 107.717, 107.803, 107.805, 107.807, 110.30, 172.101, 172.102, Special Provisions 19, 26, 53, 55, 60, 105, 118, 121, 125, 129, 131, 133, 136, B45, B55, B61, B69, B77, B81, N10, N72, 173.2a, 173.4, 173.7, 173.21, 173.22, 173.24, 173.31, 173.38, 173.51, 173.56, 173.58, 173.59, 173.124, 173.128, 173.159, 173.166, 173.171, 173.214, 173.222, 173.224, 173.225, 173.245, 173.301, 173.305, 173.306, 173.314, 173.315, 173.316, 173.318, 173.334, 173.340, 173.411, 173.433, 173.457, 173.471, 173.472, 173.476, 174.50, 174.63, 175.8, 175.85, 175.701, 175.703, 176.168, 176.340, 176.704, 178.3, 178.35, 178.47, 178.53, 178.273, 178.274, 178.503, 178.509, 178.605, 178.606, 178.608, 178.801, 178.813, 180.213.
2137-0559	(Rail Carriers and Tank Car Tank Requirements) Requirements for Rail Tank Car Tanks—Transportation of Hazardous Materials by Rail.	§§ 172.102, Special provisions: B45, B46, B55, B61, B69, B77, B78, B81; 173.10, 173.31, 174.20, 174.50, 174.63, 174.104, 174.114, 174.204, 179.3, 179.4, 179.5, 179.6, 179.7, 179.11, 179.18, 179.22, 179.100-9, 179.100-12, 179.100-13, 179.100-16, 179.100-17, 179.102-4, 179.102-17, 179.103-1, 179.103-2, 179.103-3, 179.103-5, 179.200-10, 179.200-14, 179.200-15, 179.200-16, 179.200-17, 179.200-19, 179.201-3, 179.201-8, 179.201-9, 179.220-4, 179.220-7, 179.220-8, 179.220-13, 179.220-15, 179.220-17, 179.220-18, 179.220-20, 179.220-22, 179.300-3, 179.300-7, 179.300-9, 179.300-12, 179.300-13, 179.300-15, 179.300-20, 179.400-3, 179.400-4, 179.400-11, 179.400-13, 179.400-16, 179.400-17, 179.400-19, 179.400-20, 179.500-5, 179.500-8, 179.500-12, 179.500-18, 180.505, 180.509, 180.515, 180.517.
2137-0572	Testing requirements for non-bulk packages	§§ 173.168, 178.2, 178.601, Appendix C to Part 178, Appendix D to Part 178.
2137-0582	Container Certification Statement	§§ 176.27, 176.172.
2137-0586	Hazardous Materials Public Sector Training and Planning Grants.	Part 110.
2137-0591	Response Plans for Shipments of Oil	Part 130.
2137-0595	Cargo Tank Motor Vehicles in Liquefied Compressed Gas Service.	§§ 173.315, 178.337-8, 178.337-9, 180.405, 180.416.
2137-0612	Hazardous Materials Security Plans	Part 172, Subpart I, §§ 172.800, 172.802, 172.804.
2137-0613	Subsidiary Hazard Class and Number/Type of Packagings.	§§ 172.202, 172.203
2137-0620	Inspection and Testing of Meter Provers	Part 173, Subpart A, § 173.5a.
2137-0621	Requirements for United Nations (UN) Cylinders	§§ 173.301, 173.304, 173.304b, 178.69, 178.70, 178.74, 178.75, 180.207, 180.209, 180.212, 180.215, 180.217.

[Amdt. 171-111, 56 FR 66157]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 171.6, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 171.7 Reference material.

(a) Matter incorporated by reference—
 (1) General. There is incorporated, by reference in parts 170-189 of this subchapter, matter referred to that is not

specifically set forth. This matter is hereby made a part of the regulations in parts 170-189 of this subchapter. The matter subject to change is incorporated only as it is in effect on the

date of issuance of the regulation referring to that matter. The material listed in paragraph (a)(3) has been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C 552(a) and 1 CFR part 51. Material is incorporated as it exists on the date of the approval and a notice of any change in the material will be published in the FEDERAL REGISTER. Matters referenced by footnote are included as part of the regulations of this subchapter.

(2) *Accessibility of materials.* All incorporated matter is available for inspection at:

(i) The Office of Hazardous Materials Safety, Office of Hazardous Materials Standards, East Building, PHH-10, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001. For information on the availability of this material at PHH-10,

call 1-800-467-4922, or go to: <http://www.phmsa.dot.gov>; and

(ii) The National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(3) *Table of material incorporated by reference.* The following table sets forth material incorporated by reference. The first column lists the name and address of the organization from which the material is available and the name of the material. The second column lists the section(s) of this subchapter, other than §171.7, in which the matter is referenced. The second column is presented for information only and may not be all inclusive.

Source and name of material	49 CFR reference
<i>Air Transport Association of America</i> , 1301 Pennsylvania Avenue, N.W., Washington, DC 20004-1707: ATA Specification No. 300 Packaging of Airline Supplies, Revision 19, July 31, 1996	172.102.
<i>The Aluminum Association</i> , 420 Lexington Avenue, New York, NY 10017, telephone 301-645-0756, http://www.aluminum.org : Aluminum Standards and Data, Seventh Edition, June 1982	172.102; 178.65.
Welding Aluminum: Theory and Practice, 2002 Fourth Edition	178.68
<i>American National Standards Institute, Inc.</i> , 25 West 43rd Street, New York, NY 10036: ANSI/ASHRAE 15-94, Safety Code for Mechanical Refrigeration	173.306; 173.307.
ANSI B16.5-77, Steel Pipe Flanges, Flanged Fittings	178.360-4.
ANSI N14.1 Uranium Hexafluoride—Packaging for Transport, 1971, 1982, 1987, 1990, 1995 and 2001 Editions.	173.417; 173.420.
<i>American Petroleum Institute</i> , 1220 L Street, NW, Washington, D.C. 20005-4070: API Recommended Practice Closures of Underground Petroleum Storage Tanks, 3rd Edition, March 1996.	172.102.
<i>American Pyrotechnics Association (APA)</i> , P.O. Box 30438, Bethesda, MD 20824, (301) 907-8181, www.americanpyro.com : APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 version.	173.56.
<i>American Society of Mechanical Engineers</i> , ASME International, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900, telephone 1-800-843-2763 or 1-973-882-1170, http://www.asme.org .	

§ 171.7

49 CFR Ch. I (10–1–10 Edition)

Source and name of material	49 CFR reference
'ASME Code'; ASME Code, Sections II (Parts A and B), V, VIII (Division 1), and IX of 1998 Edition of American Society of Mechanical Engineers Boiler and Pressure Vessel Code.	172.102; 173.5b; 173.24b; 173.32; 173.306; 173.315; 173.318; 173.420; 178.245-1; 178.245-3; 178.245-4; 178.245-6; 178.245-7; 178.255-1; 178.255-2; 178.255-14; 178.255-15; 178.270-2; 178.270-3; 178.270-7; 178.270-9; 178.270-11; 178.270-12; 178.271-1; 178.272-1; 178.273; 178.274; 178.276; 178.277; 178.320; 178.337-1; 178.337-2; 178.337-3; 178.337-4; 178.337-6; 178.337-16; 178.337-18; 178.338-1; 178.338-2; 178.338-3; 178.338-4; 178.338-5; 178.338-6; 178.338-13; 178.338-16; 178.338-18; 178.338-19; 178.345-1; 178.345-2; 178.345-3; 178.345-4; 178.345-7; 178.345-14; 178.345-15; 178.346-1; 178.347-1; 178.348-1; 179.400-3; 180.407.
Pipeline Transportation Systems for Liquid Hydrocarbons and other Liquids, Chapters II, III, IV, V and VI, ASME B31.4–1998 Edition.	173.5a.
American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 1942, telephone (610) 832-9585, http://www.astm.org .	
Noncurrent ASTM Standards are available from: Engineering Societies Library, 354 East 47th Street, New York, NY 10017	
ASTM A 20/A 20M–93a Standard Specification for General Requirements for Steel Plates for Pressure Vessels.	178.337-2; 179.102-4; 179.102-1; 179.102-17.
ASTM A 47–68 Malleable Iron Castings	179.200–15.
ASTM A 53, ASTM A 53/A 53M–06a Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.	173.5b.
ASTM A 106, ASTM A 106/A 106M–06a Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service.	173.5b.

Source and name of material	49 CFR reference
ASTM A 240/A 240M-99b Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels.	178.57; 178.358-5; 179.100-7; 179.100-10; 179.102-1; 179.102-4; 179.102-17; 179.200-7; 179.201-5; 179.220-7; 179.300-7; 179.400-5.
ASTM A 242-81 Standard Specification for High-Strength Low-Alloy Structural Steel	178.338-2.
ASTM A 262-93a Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels.	179.100-7; 179.200-7; 179.201-4.
ASTM A 285-78 Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength	179.300-7.
ASTM A 300-58 Steel Plates for Pressure Vessels for Service at Low Temperatures	178.337-2.
ASTM A 302/A 302M-93 Standard Specification for Pressure Vessel Plates, Alloy Steel, Manganese-Molybdenum and Manganese-Molybdenum Nickel.	179.100-7; 179.200-7; 179.220-7.
ASTM A 333-67 Seamless and Welded Steel Pipe for Low-Temperature Service	178.45.
ASTM A 370-94 Standard Test 179.102-1; 179.102-4; Methods and Definitions for Mechanical Testing of Steel Products.	179.102-17.
ASTM A 441-81 Standard Specification for High-Strength Low-Alloy Structural Manganese Vanadium Steel.	178.338-2.
ASTM A 514-81 Standard Specification for High-Yield Strength Quenched and Tempered Alloy Steel Plate, Suitable for Welding.	178.338-2.
ASTM A 515/A 515M-03 Standard Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service.	179.300-7.
ASTM A 516/A 516M-90 Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate and Lower-Temperature Service.	178.337-2; 179.100-7; 179.102-1; 179.102-2; 179.102-4; 179.102-17; 179.200-7; 179.220-7; 179.300-7.
ASTM A 537/A 537M-91 Standard Specification for Pressure Vessel Plates, Heat-Treated, Carbon-Manganese-Silicon Steel.	179.100-7; 179.102-4; 179.102-17.
ASTM A 572-82 Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Steels of Structural Quality.	178.338-2.
ASTM A 588-81 Standard Specification for High-Strength Low-Alloy Structural Steel with 50 Ksi Minimum Yield Point to 4 in. Thick.	178.338-2.
ASTM A 606-75 Standard Specification for Steel Sheet and Strip Hot-Rolled and Cold-Rolled, High-Strength, Low-Alloy, with Improved Atmospheric Corrosion Resistance, 1975 (Re-approved 1981).	178.338-2.
ASTM A 607-98 Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Columbium or Vanadium, or Both, Hot-Rolled and Cold-Rolled.	178.338-2.
ASTM A 612-72a High Strength Steel Plates for Pressure Vessels for Moderate and Lower Temperature Service.	178.337-2.
ASTM A 633-79a Standard Specification for Normalized High-Strength Low-Alloy Structural Steel, 1979 Edition.	178.338-2.
ASTM A 715-81 Standard Specification for Steel Sheet and Strip, Hot-Rolled, High-Strength, Low-Alloy with Improved Formability, 1981.	178.338-2.
ASTM A 1008/A 1008M-03 Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High Strength Low-Alloy with Improved Formability.	178.338-2; 178.345-2
ASTM A 1011/A 1011M-03a Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low Alloy and High Strength Low-Alloy with Improved Formability.	178.338-2; 178.345-2
ASTM B 162-93a Standard Specification for Nickel Plate, Sheet, and Strip	173.249; 179.200-7.
ASTM B 209-93 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate	179.100-7; 179.200-7; 179.220-7.
ASTM B 221-76 Aluminum Alloy Extruded Bars, Rods, Shapes, and Tubes	178.46.
ASTM B 557-84 Tension Testing Wrought and Cast Aluminum and Magnesium-Alloy Products ..	178.46.
ASTM B 580-79 Standard Specification for Anodic Oxide Coatings on Aluminum, (Re-approved 2000).	173.316; 173.318; 178.338-17.
ASTM D 1238-90b Standard Test Method for Flow Rates of Thermoplastics for Extrusion Plastometer.	173.225.
ASTM D 1709-01 Standard Text Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method.	173.197.
ASTM D 1835-97 Standard Specification for Liquefied Petroleum (LP) Gases	180.209.

§ 171.7

49 CFR Ch. I (10–1–10 Edition)

Source and name of material	49 CFR reference
ASTM D 1838–64 Copper Strip Corrosion by Liquefied Petroleum (LP) Gases	173.315.
ASTM D 1922–00a Standard Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method.	173.197.
ASTM D 4206–96 Standard Test Method for Sustained Burning of Liquid Mixtures Using the Small Scale Open-Cup Apparatus.	173.120.
ASTM D 4359–90 Standard Test Method for Determining Whether a Material is a Liquid or a Solid.	171.8.
ASTM E 8–99 Standard Test Methods for Tension Testing of Metallic Materials	178.36; 178.37; 178.38; 178.39; 178.44; 178.45; 178.50; 178.51; 178.53; 178.55; 178.56; 178.57; 178.58; 178.59; 178.60; 178.61; 178.68.
ASTM E 23–98 Standard Test Methods for Notched Bar Impact Testing of Metallic Materials	178.57.
ASTM E 112–88 Standard Test Methods for Determining Average Grain Size	178.44.
ASTM E 112–96 Standard Test Methods for Determining Average Grain Size, 1996 Edition	178.274; Part 178, appendix A.
ASTM E 114–95 Standard Practice for Ultrasonic Pulse-Echo Straight-Beam Examination by the Contact Method.	178.45.
ASTM E 213–98 Standard Practice for Ultrasonic Examination of Metal Pipe and Tubing	178.45.
<i>American Water Works Association</i> , 1010 Vermont Avenue, N.W., Suite 810, Washington, DC 20005:	
AWWA Standard C207–55, Steel Pipe Flanges, 1955	178.360–4.
<i>American Welding Society</i> , 550 N.W. Le Jeune Road, Miami, Florida 33126:	
AWS Code B 3.0; Standard Qualification Procedure; 1972 (FRB 3.0–41, rev. May 1973)	178.356–2, 178.358–2.
AWS Code D 1.0; Code for Welding in Building Construction (FR D 1.0–66, 1966)	178.356–2; 178.358–2.
<i>Association of American Railroads</i> , American Railroads Building, 50 F Street, NW., Washington, DC 20001; telephone (877) 999–8824, http://www.aar.org/publications.com ;	

Pipeline and Hazardous Materials Safety Admin., DOT

§ 171.7

Source and name of material	49 CFR reference
AAR Manual of Standards and Recommended Practices, Section C—Part III, Specifications for Tank Cars, Specification M-1002, (AAR Specifications for Tank Cars), December 2000.	173.31; 174.63; 179.6; 179.7; 179.15; 179.16; 179.20; 179.22; 179.100-9; 179.100-10; 179.100-12; 179.100-13; 179.100-14; 179.100-18; 179.101-1; 179.102-1; 179.102-4; 179.102-17; 179.103-5; 179.200-7; 179.200-9; 179.200-10; 179.200-11; 179.200-13; 179.200-17; 179.200-22; 179.201-6; 179.220-6; 179.220-7; 179.220-10; 179.220-11; 179.220-14; 179.220-18; 179.220-26; 179.300-9; 179.300-10; 179.300-15; 179.300-17; 179.400-5; 179.400-6; 179.400-8; 179.400-11; 179.400-12; 179.400-15; 179.400-18; 179.400-20; 179.400-25; 180.509; 180.513; 180.515; 180.517.
AAR Manual of Standards and Recommended Practices, Section I, Specially Equipped Freight Car and Intermodal Equipment, 1988.	174.55; 174.63.
AAR Specifications for Design, Fabrication and Construction of Freight Cars, Volume 1, 1988	179.16.
<i>Chlorine Institute, Inc.</i> , 1300 Wilson Boulevard, Arlington, VA 22209	
AAR Standard 286; AAR Manual of Standards and Recommended Practices, Section C, Car Construction Fundamentals and Details, Standard S-286, Free/Unrestricted Interchange for 286,000 lb Gross Rail Load Cars (Adopted 2002; Revised: 2003, 2005, 2006).	179.13
Chlorine Institute Emergency Kit "A" for 100-lb. & 150 lb. Chlorine Cylinders (with the exception of repair method using Device 8 for side leaks), Edition 10, June 2003.	173.3
Chlorine Institute Emergency Kit "B" for Chlorine Ton Containers (with the exception of repair method using Device 9 for side leaks), Edition 9, June 2003.	173.3
Type 1½ JQ 225, Dwg., H51970, Revision F, November 1996; or Type 1½ JQ 225, Dwg. H50155, Revision H, November 1996.	173.315.
Section 3, Pamphlet 57, Emergency Shut-Off Systems for Bulk Transfer of Chlorine, Edition 4, October 2003.	177.840.
Section 3, Pamphlet 166, Angle Valve Guidelines for Chlorine Bulk Transportation, 1st Edition, October 2002.	178.337-9.
Standard Chlorine Angle Valve Assembly, Dwg. 104-8, July 1993	178.337-9.
Excess Flow Valve with Removable Seat, Dwg. 101-7, July 1993	178.337-8.
Excess Flow Valve with Removable Basket, Dwg. 106-6, July 1993	178.337-8.
Standards for Housing and Manway Covers for Steel Cargo Tanks, Dwgs. 137-1 and 137-2, September 1, 1982.	178.337-10.
Typical Manway Arrangement Chlorine Cargo Tank, Dwg 137-5, November 1996	178.337-10.
Canadian General Standards Board, Place du Portage III, 6B1 11 Laurier Street, Gatineau, Quebec, Canada K1A 1G6	171.12
National Standard of Canada (CAN/CGSB 43.147—2005) Construction, Modification, Qualification, Maintenance, and Selection and Use of Means of Containment for the Handling, Offering for Transport, or Transportation of Dangerous Goods by Rail.	

Source and name of material	49 CFR reference
CGA Pamphlet C–3, Standards for Welding on Thin-Walled Steel Cylinders, 1994	178.47; 178.50; 178.51; 178.53; 178.55; 178.56; 178.57; 178.58; 178.59; 178.60; 178.61; 178.65; 178.68; 180.211.
CGA C–5, Cylinder Service Life—Seamless Steel High Pressure Cylinders, 1991 (reaffirmed 1995).	173.302a.
CGA Pamphlet C–6, Standards for Visual Inspection of Steel Compressed Gas Cylinders, 1993	173.3, 173.198, 180.205, 180.209, 180.211, 180.411, 180.519.
CGA Pamphlet C–6.1, Standards for Visual Inspection of High Pressure Aluminum Compressed Gas Cylinders, 2002, Fourth Edition.	180.205; 180.209
CGA Pamphlet C–6.2, Guidelines for Visual Inspection and Requalification of Fiber Reinforced High Pressure Cylinders, 1996, Third Edition.	180.205.
CGA Pamphlet C–6.3, Guidelines for Visual Inspection and Requalification of Low Pressure Aluminum Compressed Gas Cylinders, 1991.	180.205; 180.209.
CGA C–7, Guide to Preparation of Precautionary Labeling and Marking of Compressed Gas Containers, Appendix A, issued 2004 (8th Edition).	172.400a.
CGA Pamphlet C–8, Standard for Requalification of DOT-3HT Cylinder Design, 1985	180.205; 180.209.
CGA Pamphlet C–11, Recommended Practices for Inspection of Compressed Gas Cylinders at Time of Manufacture, 2001, Third Edition.	178.35.
CGA Pamphlet C–12, Qualification Procedure for Acetylene Cylinder Design, 1994	173.301; 173.303; 178.59; 178.60.
CGA Pamphlet C–13, Guidelines for Periodic Visual Inspection and Requalification of Acetylene Cylinders, 2000, Fourth Edition.	173.303; 180.205; 180.209.
CGA Pamphlet C–14, Procedures for Fire Testing of DOT Cylinder Pressure Relief Device Systems, 1979.	173.301; 173.323.
CGA Pamphlet G–2.2, Guideline Method for Determining Minimum of 0.2% Water in Anhydrous Ammonia, 1985, Second Edition, Reaffirmed 1997.	173.315.
CGA Pamphlet G–4.1, Cleaning Equipment for Oxygen Service, 1985	178.338–15.
CGA Pamphlet P–20, Standard for the Classification of Toxic Gas Mixtures, 2003, Third Edition	173.115.
CGA Pamphlet P–20, Standard for the Classification of Toxic Gas Mixtures, 1995	173.115.
CGA S–1.1, Pressure Relief Device Standards—Part 1—Cylinders for Compressed Gases, 2005 (with the exception of paragraph 9.1.1.1), Twelfth Edition.	173.301, 173.304a 178.75.
CGA Pamphlet S–1.2, Safety Relief Device Standards Part 2—Cargo and Portable Tanks for Compressed Gases, 1980.	173.315; 173.318; 178.276; 178.277.
CGA S–7, Method for Selecting Pressure Relief Devices for Compressed Gas Mixtures in Cylinders, 2005.	173.301.
CGA Technical Bulletin TB–2, Guidelines for Inspection and Repair of MC–330 and MC–331 Cargo Tanks, 1980.	180.407; 180.413.
CGA Technical Bulletin TB–25, Design Considerations for Tube Trailers, 2008 Edition	173.301.
Department of Defense (DOD), 2461 Eisenhower Avenue, Alexandria, VA 22331:	
DOD TB 700–2; NAVSEAINST 8020.8B; AFTO 11A–1–47; DLAR 8220.1: Explosives Hazard Classification Procedures, January 1998.	173.56.
Packaging of Hazardous Material, DLAD 4145.41/ AR 700–143/AFJI 24–210/NAVSUPINST 4030.55B/MCO 4030.40B, January 14, 2000.	173.7
Department of Energy (USDOE), 100 Independence Avenue SW., Washington, DC 20545:	
USDOE publications available from: Superintendent of Documents, Government Printing Office (GPO) or The National Technical Information Service (NTIS).	
USDOE, CAPE–1662, Revision 1, and Supplement 1, Civilian Application Program Engineering Drawings, April 6, 1988.	178.356–1; 178.356–2; 178.358–1; 178.358–2; 178.358–3; 178.358–4.
USDOE, Material and Equipment Specification No. SP–9, Rev. 1, and Supplement—Fire Resistant Phenolic Foam, March 28, 1968.	178.356–2; 178.358–2.
USDOE, KSS–471, November 30, 1986—Proposal for Modifications to U.S. Department of Transportation Specification 21PF–1, Fire and Shock Resistant Phenolic Foam—Insulated Metal Overpack.	178.358–1; 178.358–3.
General Services Administration, Specification Office, Room 6662, 7th and D Street, S.W., Washington, DC 20407:	
Federal Specification RR–C–901D, Cylinders, Compressed Gas: Seamless Shatterproof, High Pressure DOT 3AA Steel, and 3AL Aluminum, February 21, 2003 (Superseding RR–C–901C, 1981).	173.302; 173.336; 173.337.
Institute of Makers of Explosives, 1120 19th Street NW., Suite 310, Washington, DC 20036–3605:	
IME Safety Library Publication No. 22 (IME Standard 22), Recommendation for the Safe Transportation of Detonators in a Vehicle with Certain Other Explosive Materials, May 1993.	173.63; 177.835.
International Atomic Energy Agency (IAEA), P.O. Box 100, Wagramer Strasse 5, A–1400 Vienna, Austria:	

Pipeline and Hazardous Materials Safety Admin., DOT

§ 171.7

Source and name of material	49 CFR reference
Also available from: Bernan Associates, 4611-F Assembly Drive, Lanham, MD 20706-4391, USA; or Renouf Publishing Company, Ltd., 812 Proctor Avenue, Ogdensburg, New York 13669, USA.	
IAEA, Regulations for the Safe Transport of Radioactive Material, (IAEA Regulations), 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised).	171.22; 171.23; 171.26, 173.415, 173.416, 173.417, 173.473
International Civil Aviation Organization ("ICAO"), 999 University Street, Montréal, Quebec H3C 5H7, Canada, 1-514-954-8219, http://www.icao.int :	
ICAO Technical Instructions available from: INTEREG, International Regulations, Publishing and Distribution Organization, P.O. Box 60105, Chicago, IL 60660.	
Technical Instructions for the Safe Transport of Dangerous Goods by Air ("ICAO Technical Instructions"), 2009-2010 Edition.	171.8; 171.22; 171.23; 171.24; 172.202; 172.401; 172.512; 172.602; 173.56; 173.320; 175.33; 178.3.
International Electrotechnical Commission (IEC) 3, rue de Varembe, P.O. Box 131, CH-1211, GENEVA 20, Switzerland:	
Fuel cell technologies—Part 6-1: Micro fuel cell power systems—Safety, IEC/PAS 62282-6-1:2006(E), First Edition 2006-02, with Corrigendum 1, First Edition 2007-04.	§ 175.10.
International Maritime Organization ("IMO"), 4 Albert Embankment, London, SE1 7SR, United Kingdom or New York Nautical Instrument & Service Corporation, 140 West Broadway, New York, NY 10013, +44 (0) 20 7735 7611, http://www.imo.org :	
International Convention for the Safety of Life at Sea, ("SOLAS") 176.63, 176.84. Amendments 2002, Chapter II-2/Regulation 19, Consolidated Edition 2004..	
International Maritime Dangerous Goods Code ("IMDG Code"), 2008 Edition, Incorporating Amendment 34-08 (English Edition), Volumes 1 and 2.	171.22; 171.23; 171.25; 172.101 Appendix B; 172.202; 172.401; 172.502; 172.602; 173.21; 173.56; 176.2; 176.5; 176.11; 176.27; 176.30; 176.84; 178.3; 178.274.
International Organization for Standardization, Case Postale 56, CH-1211, Geneve 20, Switzerland, http://www.iso.org :	
Also available from: ANSI 25, West 43rd Street, New York, NY 10036, 1-212-642-4900, http://www.ansi.org .	
ISO 535-1991(E) Paper and board—Determination of water absorptiveness—Cobb method	178.516; 178.707; 178.708.
ISO 1496-1: 1990 (E)—Series 1 freight containers—Specification and testing, Part 1: General cargo containers. Fifth Edition, (August 15, 1990).	173.411
ISO 1496-3—Series 1 freight containers—Specification and testing—Part 3: Tank containers for liquids, gases and pressurized dry bulk, Fourth edition, March 1995, (E).	178.74; 178.75; 178.274.
ISO 2431-1984(E) Standard Cup Method	173.121.
ISO 2592-1973(E) Petroleum products—Determination of flash and fire points—Cleveland open cup method.	173.120.
ISO 2919-1980(E) Sealed radioactive sources—Classification	173.469.
ISO 3036-1975(E) Board—Determination of puncture resistance	178.708.
ISO 3574-1986(E) Cold-reduced carbon steel sheet of commercial and drawing qualities	178.503; Part 178, appendix C.
ISO 3807-2, Cylinders for acetylene—Basic requirements—Part 2: Cylinders with fusible plugs, First edition, March 2000, (E).	173.303; 178.71.
ISO 4126-1 Safety valves—Part 1: General Requirements, December 15, 1991, First Edition	178.274.
ISO 6406, Gas cylinders—Seamless steel gas cylinders—Periodic inspection and testing, Second edition, February 2005, (E).	180.207.
ISO 6892 Metallic materials—Tensile testing, July 15, 1984, First Edition	178.274.
ISO 7225, Gas cylinders—Precautionary labels, Second Edition, July 2005, (E)	178.71.
ISO 7866, Gas cylinders—Refillable seamless aluminum alloy gas cylinders—Design, construction and testing, First edition, June 1999, (E).	178.71.
ISO 8115 Cotton bales—Dimensions and density, 1986 Edition	172.102.
ISO 9809-1: Gas cylinders—Refillable seamless steel gas cylinders—Design, construction and testing—Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa., First edition, June 1999, (E).	178.37; 178.71; 178.75.
ISO 9809-2: Gas cylinders—Refillable seamless steel gas cylinders—Design, construction and testing—Part 2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1 100 MPa., First edition, June 2000, (E).	178.71; 178.75.
ISO 9809-3: Gas cylinders—Refillable seamless steel gas cylinders—Design, construction and testing—Part 3: Normalized steel cylinders, First edition, December 2000, (E).	178.71; 178.75.
ISO 9978:1992(E)—Radiation protection—Sealed radioactive sources—Leakage test methods. First Edition, (February 15, 1992).	173.469.

Source and name of material	49 CFR reference
ISO 10156:1996, Gases and Gas Mixtures—Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets, Second edition, February 1996 (E).	173.115.
ISO 10156–2:2005, Gas cylinders—Gases and gas mixtures—Part 2: Determination of oxidizing ability of toxic and corrosive gases and gas mixtures, First edition, August 2005, (E).	173.115.
ISO 10297, Gas cylinders—Refillable gas cylinder valves—Specification and type testing, First edition, May 1999, (E).	173.301b, 178.71.
ISO 10461, Gas cylinders—Seamless aluminum—alloy gas cylinders—Periodic inspection and testing, Second edition, February 2005, (E).	180.207.
ISO 10462, Gas cylinders—Transportable cylinders for dissolved acetylene—Periodic inspection and maintenance, Second edition, February 2005, (E).	180.207.
ISO 11114–1, Transportable gas cylinders—Compatibility of cylinder and valve materials with gas contents—Part 1: Metallic materials, First edition, October 1997, (E).	173.301b; 178.71.
ISO 11114–2, Transportable gas cylinders—Compatibility of cylinder and valve materials with gas contents—Part 2: Non-metallic materials, First edition, December 2000, (E).	173.301b; 178.71.
ISO 11117, Gas cylinders—Valve protection caps and valve guards for industrial and medical gas cylinders—Design, construction and tests, First edition, August 1998, (E).	173.301b.
ISO 11118, Gas cylinders—Non-refillable metallic gas cylinders—Specification and test methods, First edition, October 1999, (E).	178.71.
ISO 11119–1, Gas cylinders—Gas cylinders of composite construction—Specification and test methods—Part 1: Hoop-wrapped composite gas cylinders, First edition, May 2002, (E).	178.71.
ISO 11119–2, Gas cylinders—Gas cylinders of composite construction—Specification and test methods—Part 2: Fully wrapped fibre reinforced composite gas cylinders with load-sharing metal liners, First edition, May 2002, (E).	178.71.
ISO 11119–3, Gas cylinders of composite construction—Specification and test methods—Part 3: Fully wrapped fibre reinforced composite gas cylinders with non-load-sharing metallic or non-metallic liners, First edition, September 2002, (E).	178.71.
ISO 11120, Gas cylinders—Refillable seamless steel tubes of water capacity between 150 L and 3000 L—Design, construction and testing, First edition, March 1999, (E).	178.71; 178.75.
ISO 11621, Gas cylinders—Procedures for change of gas service, First edition, April 1997, (E) ..	173.302, 173.336, 173.337.
ISO 11623, Transportable gas cylinders—Periodic inspection and testing of composite gas cylinders, First edition, March 2002, (E).	180.207.
National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229: National Board Inspection Code, A Manual for Boiler and Pressure Vessel Inspectors, NB–23, 1992 Edition.	180.413.
National Fire Protection Association, Batterymarch Park, Quincy, MA 02269: NFPA 58-Liquefied Petroleum Gas Code, 2001 Edition	173.315.
National Institute of Standards and Technology, Department of Commerce, 5285 Port Royal Road, Springfield, VA 22151:	
USDC, NBS Handbook H–28 (1957), 1957 Handbook of Screw-Thread Standards for Federal Services, December 1966 Edition.	179.2; 178.45; 178.46.
Organization for Economic Cooperation and Development (OECD), OECD Publications and Information Center, 2001 L Street, N.W., Suite 700, Washington, DC 20036:	
OECD Guideline for Testing of Chemicals, No. 404 "Acute Dermal Irritation/Corrosion," 1992	173.137.
Transport Canada, TDG Canadian Government Publishing Center, Supply and Services, Canada, Ottawa, Ontario, Canada K1A 0S9, 416–973–1868, http://www.tc.gc.ca :	
Transportation of Dangerous Goods Regulations (Transport Canada TDG Regulations), August 2001 including Clear Language Amendments SOR 2001–286, Amendment 1 (SOR/2002–306)	171.12; 171.22;
August 8, 2002; Amendment 2 (SOR/2003–273) July 24, 2003; Amendment 3 (SOR/2003–400) December 3, 2003; Amendment 4 (SOR/2005–216) July 13, 2005; Amendment 5 (SOR/2005–279) September 21, 2005; and subsection 4.18(5) of Amendment 6 (SOR/2008–34) February 7, 2008.	171.23; 172.401; 172.502; 172.519; 172.602; 173.31; 173.32; 173.33.
Truck Trailer Manufacturers Association, 1020 Princess Street, Alexandria, Virginia 22314:	
TTMA RP No. 61–98, Performance of manhole and/or Fill Opening Assemblies on MC 306, DOT 406, Non-ASME MC 312 and Non-ASME DOT 412 Cargo Tanks, June 1, 1998.	180.405.
TTMA RP No. 81–97, Performance of Spring Loaded Pressure Relief Valves on MC 306, MC 307, MC 312, DOT 406, DOT 407, and DOT 412 Tanks, July 1, 1997 Edition.	178.345–10; 178.346–3.
TTMA TB No. 107, Procedure for Testing In-Service Unmarked and/or Uncertified MC 306 and Non-ASME MC 312 Type Cargo Tank Manhole Covers, June 1, 1998 Edition.	180.405.
United Nations, Publications, 2 United Nations Plaza, Room DC2–853, New York, NY 10017, 1–212–963–8302, http://unp.un.org .	
UN Recommendations on the Transport of Dangerous Goods, Fifteenth revised edition (2007). Volumes I and II.	171.8; 171.12; 171.22; 171.23; 172.202; 172.401; 172.502; 173.22; 173.24; 173.24b; 173.40; 173.56; 173.192; 173.197; 173.302b; 173.304b; 178.75; 178.274; 178.801.

Pipeline and Hazardous Materials Safety Admin., DOT

§ 171.7

Source and name of material	49 CFR reference
UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Fourth revised edition, (2003), and Addendum 2, (2004).	172.102; 173.21; 173.56; 173.57; 173.58; 173.115; 173.124; 173.125; 173.127; 173.128; 173.137; 173.185; Part 173, appendix H; 178.274.
United States Enrichment Corporation, Inc. (USEC): USEC Inc., 6903 Rockledge Drive, Bethesda, MD 20817. USEC-651—Good Handling Practices for Uranium Hexafluoride, Revision 8, January 1999	173.417

(b) List of informational materials not requiring incorporation by reference. The materials listed in this paragraph do not require approval for incorporation by reference and are included for informational purposes. These materials may be used as noted in those sections in which the material is referenced.

Source and name of material	49 CFR reference
<i>American Biological Safety Association</i> 1202 Allanson Road, Mundelein, IL 60060	
Risk Group Classification for Infectious Agents, 1998	173.134
<i>American Institute of Chemical Engineers (AIChE)</i> , 3 Park Avenue New York, NY 10016-5991	
Process Safety Progress Journal, Vol. 21, No. 2. Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology	Note to § 173.225(h)(3)(vi).
<i>American Society for Testing and Materials</i> , 100 Barr Harbor Drive, West Conshohocken, PA 19428: Noncurrent ASTM Standards are available from: Engineering Societies Library, 354 East 47th Street, New York, NY 10017	
ASTM E 380-89 Standards for Metric Practice	171.10
<i>Association of American Railroads</i> , American Railroads Building, 50 F Street, NW., Washington, DC 20001	
AAR Catalog Nos. SE60CHT; SE60CC; SE60CHTE; SE60CE; SE60DC; SE60DE	179.14
AAR Catalog Nos. SE67CC; SE67CE; SE67BHT; SE67BC; SE67BHTE; SE67BE	179.14
AAR Catalog Nos. SE68BHT; SE68BC; SE68BHTE; SE68BE	179.14
AAR Catalog Nos. SE69AHTE; SE69AE	179.14
AAR Catalog Nos. SF70CHT; SF70CC; SF70CHTE; SF70CE	179.14
AAR Catalog Nos. SF73AC; SF73AE; SF73AHT; SF73AHTE	179.14
AAR Catalog Nos. SF79CHT; SF79CC; SF79CHTE; SF79CE	179.14
<i>Bureau of Explosives</i> , Hazardous Materials Systems (BOE), Association of American Railroads, American Railroads Building, 50 F Street, NW., Washington, DC 20001	
Fetterley's Formula (The Determination of the Relief Dimensions for Safety Valves on Containers in which Liquefied gas is charged and when the exterior surface of the container is exposed to a temperature of 1,200 °F.).	173.315
Pamphlet 6, Illustrating Methods for Loading and Bracing Carload and Less-Than-Carload Shipments of Explosives and Other Dangerous Articles, 1962.	174.55; 174.101; 174.112; 174.115; 174.290
Pamphlet 6A (includes appendix No. 1, October 1944 and appendix 2, December 1945), Illustrating Methods for Loading and Bracing Carload and Less-Than-Carload Shipments of Loaded Projectiles, Loaded Bombs, etc., 1943.	174.101; 174.290
Pamphlet 6C, Illustrating Methods for Loading and Bracing Trailers and Less-Than-Trailer Shipments of Explosives and Other Dangerous Articles Via Trailer-on-Flatcar (TOFC) or Container-on-Flatcar (COFC), 1985.	174.55; 174.63; 174.101; 174.112; 174.115
Emergency Handling of Hazardous Materials in Surface Transportation, 1989	171.7
<i>Centers for Disease Control and Prevention</i> 1600 Clifton Road, Atlanta, GA 30333	
Biosafety in Microbiological and Biomedical Laboratories, Fourth Edition, April 1999	173.134
Compressed Gas Association, Inc., 4221 Walney Road, 5th Floor, Chantilly, Virginia 20151	
CGA C-1.1, Personnel Training and Certification Guidelines for Cylinder Requalification By the Volumetric Expansion Method, 2004, First Edition.	180.209
<i>National Institutes of Health</i> Bethesda, MD 20892	
NIH Guidelines for Research Involving Recombinant DNA Molecules (NIH Guidelines), January 2001, Appendix B.	173.134
<i>Pantone Incorporated</i> 590 Commerce Boulevard, Carlstadt, New Jersey 07072-3098	
Pantone® Formula guide coated/uncoated, Second Edition 2004	172.407, 172.519

Source and name of material	49 CFR reference
<i>Society of Plastics Industries, Inc.</i> , Organic Peroxide Producers Safety Division, 1275 K Street, NW., Suite 400, Washington, DC 20005	
Self Accelerating Decomposition Temperature Test, 1972	173.21
<i>Truck Trailer Manufacturers Association</i> , 1020 Princess Street, Alexandria, Virginia 22314, telephone (703) 549-3010, http://www.ttmanet.org ; TTMA RP No. 96-01, TTMA RP No. 96-01, Structural Integrity of DOT 406, DOT 407, and DOT 412 Cylindrical Cargo Tanks, January 2001 Edition.	178.345-3

[Amdt. 171-111, 55 FR 52466, Dec. 21, 1990; 71 FR 78611, Dec. 29, 2006; 75 FR 69, Jan. 4, 2010]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §171.7, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

EDITORIAL NOTE: At 68 FR 19273, Apr. 18, 2003, §171.7(a)(3) was amended by removing the entry for "TTMA TB No. 81" under "Truck Trailer Manufacturers Association". The amendment could not be incorporated because that entry does not exist.

§ 171.8 Definitions and abbreviations.

In this subchapter,
Administrator means the Administrator, Pipeline and Hazardous Materials Safety Administration.

Aerosol means any non-refillable receptacle containing a gas compressed, liquefied or dissolved under pressure, the sole purpose of which is to expel a nonpoisonous (other than a Division 6.1 Packing Group III material) liquid, paste, or powder and fitted with a self-closing release device allowing the contents to be ejected by the gas.

Aggregate lithium content means the sum of the grams of lithium content or equivalent lithium content contained by the cells comprising a battery.

Agricultural product means a hazardous material, other than a hazardous waste, whose end use directly supports the production of an agricultural commodity including, but not limited to a fertilizer, pesticide, soil amendment or fuel. An *agricultural product* is limited to a material in Class 3, 8 or 9, Division 2.1, 2.2, 5.1, or 6.1, or an ORM-D material.

Approval means a written authorization, including a competent authority approval, from the Associate Administrator or other designated Department official, to perform a function for which prior authorization by the Associate Administrator is required under subchapter C of this chapter (49 CFR parts 171 through 180.)

Approved means approval issued or recognized by the Department unless otherwise specifically indicated in this subchapter.

Asphyxiant gas means a gas which dilutes or replaces oxygen normally in the atmosphere.

Associate Administrator means the Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration.

Atmospheric gases means air, nitrogen, oxygen, argon, krypton, neon and xenon.

Authorized Inspection Agency means:
(1) A jurisdiction which has adopted and administers one or more sections of the ASME Boiler and Pressure Vessel Code as a legal requirement and has a representative serving as a member of the ASME Conference Committee; or
(2) an insurance company which has been licensed or registered by the appropriate authority of a State of the United States or a Province of Canada to underwrite boiler and pressure vessel insurance in such State or Province.

Authorized Inspector means an Inspector who is currently commissioned by the National Board of Boiler and Pressure Vessel Inspectors and employed as an Inspector by an Authorized Inspection Agency.

Bag means a flexible packaging made of paper, plastic film, textiles, woven material or other similar materials.

Bar means 1 BAR = 100 kPa (14.5 psi).

Barge means a non-selfpropelled vessel.

Biological product. See §173.134 of this subchapter.

Biological substances, Category B. See §173.134 of this subchapter.

Bottle means an inner packaging having a neck of relatively smaller cross section than the body and an opening capable of holding a closure for retention of the contents.

Bottom shell means that portion of a tank car tank surface, excluding the head ends of the tank car tank, that lies within two feet, measured circumferentially, of the bottom longitudinal center line of the tank car tank.

Box means a packaging with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fiberboard, plastic, or other suitable material. Holes appropriate to the size and use of the packaging, for purposes such as ease of handling or opening, or to meet classification requirements, are permitted as long as they do not compromise the integrity of the packaging during transportation, and are not otherwise prohibited in this subchapter.

Break-bulk means packages of hazardous materials that are handled individually, palletized, or unitized for purposes of transportation as opposed to bulk and containerized freight.

Btu means British thermal unit.

Bulk packaging means a packaging, other than a vessel or a barge, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment. A Large Packaging in which hazardous materials are loaded with an intermediate form of containment, such as one or more articles or inner packagings, is also a bulk packaging. Additionally, a bulk packaging has: * * *

(1) A maximum capacity greater than 450 L (119 gallons) as a receptacle for a liquid;

(2) A maximum net mass greater than 400 kg (882 pounds) and a maximum capacity greater than 450 L (119 gallons) as a receptacle for a solid; or

(3) A water capacity greater than 454 kg (1000 pounds) as a receptacle for a gas as defined in §173.115 of this subchapter.

Bundle of cylinders means assemblies of UN cylinders fastened together and interconnected by a manifold and transported as a unit. The total water capacity for the bundle may not exceed 3,000 L, except that a bundle intended

for the transport of gases in Division 2.3 is limited to a water capacity of 1,000 L.

Bureau of Explosives means the Bureau of Explosives (B of E) of the Association of American Railroads.

C means Celsius or Centigrade.

Captain of the Port (COTP) means the officer of the Coast Guard, under the command of a District Commander, so designated by the Commandant for the purpose of giving immediate direction to Coast Guard law enforcement activities within an assigned area. As used in this subchapter, the term *Captain of the Port* includes an authorized representative of the Captain of the Port.

Carfloat means a vessel that operates on a short run on an irregular basis and serves one or more points in a port area as an extension of a rail line or highway over water, and does not operate in ocean, coastwise, or ferry service.

Cargo aircraft only means an aircraft that is used to transport cargo and is not engaged in carrying passengers. For purposes of this subchapter, the terms *cargo aircraft only*, *cargo-only aircraft* and *cargo aircraft* have the same meaning.

Cargo tank means a bulk packaging that:

(1) Is a tank intended primarily for the carriage of liquids or gases and includes appurtenances, reinforcements, fittings, and closures (for the definition of a tank, see 49 CFR 178.320, 178.337-1, or 178.338-1, as applicable);

(2) Is permanently attached to or forms a part of a motor vehicle, or is not permanently attached to a motor vehicle but which, by reason of its size, construction or attachment to a motor vehicle is loaded or unloaded without being removed from the motor vehicle; and

(3) Is not fabricated under a specification for cylinders, intermediate bulk containers, multi-unit tank car tanks, portable tanks, or tank cars.

Cargo tank motor vehicle means a motor vehicle with one or more cargo tanks permanently attached to or forming an integral part of the motor vehicle.

Cargo vessel means: (1) Any vessel other than a passenger vessel; and

(2) Any ferry being operated under authority of a change of character certificate issued by a Coast Guard Officer-in-Charge, Marine Inspection.

Carrier means a person who transports passengers or property in commerce by rail car, aircraft, motor vehicle, or vessel.

CC means closed-cup.

Character of vessel means the type of service in which the vessel is engaged at the time of carriage of a hazardous material.

Class means hazard class. See *hazard class*.

Class 1. See §173.50 of this subchapter.

Class 2. See §173.115 of this subchapter.

Class 3. See §173.120 of this subchapter.

Class 4. See §173.124 of this subchapter.

Class 5. See §173.128 of this subchapter.

Class 6. See §173.132 of this subchapter.

Class 7. See §173.403 of this subchapter.

Class 8. See §173.136 of this subchapter.

Class 9. See §173.140 of this subchapter.

Closure means a device which closes an opening in a receptacle.

COFC means container-on-flat-car.

Combination packaging means a combination of packaging, for transport purposes, consisting of one or more inner packagings secured in a non-bulk outer packaging. It does not include a composite packaging.

Combustible liquid. See §173.120 of this subchapter.

Commerce means trade or transportation in the jurisdiction of the United States within a single state; between a place in a state and a place outside of the state; that affects trade or transportation between a place in a state and place outside of the state; or on a United States-registered aircraft.

Compatibility group letter means a designated alphabetical letter used to categorize different types of explosive substances and articles for purposes of stowage and segregation. See §173.52 of this subchapter.

Competent Authority means a national agency responsible under its national

law for the control or regulation of a particular aspect of the transportation of hazardous materials (dangerous goods). The term *Appropriate Authority*, as used in the ICAO Technical Instructions (IBR, see §171.7), has the same meaning as *Competent Authority*. For purposes of this subchapter, the Associate Administrator is the Competent Authority for the United States.

Composite packaging means a packaging consisting of an outer packaging and an inner receptacle, so constructed that the inner receptacle and the outer packaging form an integral packaging. Once assembled it remains thereafter an integrated single unit; it is filled, stored, shipped and emptied as such.

Compressed gas. See §173.115 of this subchapter.

Consignee means the person or place shown on a shipping document, package marking, or other media as the location to which a carrier is directed to transport a hazardous material.

Consumer commodity means a material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies or instrumentalities for consumption by individuals for purposes of personal care or household use. This term also includes drugs and medicines.

Containership means a cargo vessel designed and constructed to transport, within specifically designed cells, portable tanks and freight containers which are lifted on and off with their contents intact.

Corrosive material. See §173.136 of this subchapter.

Crate means an outer packaging with incomplete surfaces.

Crewmember means a person assigned to perform duty in an aircraft during flight time.

Cryogenic liquid. See §173.115(g) of this subchapter.

Cultures and stocks. See §173.134 of this subchapter.

Cylinder means a pressure vessel designed for pressures higher than 40 psia and having a circular cross section. It does not include a portable tank, multi-unit tank car tank, cargo tank, or tank car.

Dangerous when wet material. See §173.124 of this subchapter.

Design Certifying Engineer means a person registered with the Department in accordance with subpart F of part 107 of this chapter who has the knowledge and ability to perform stress analysis of pressure vessels and otherwise determine whether a cargo tank design and construction meets the applicable DOT specification. A *Design Certifying Engineer* meets the knowledge and ability requirements of this section by meeting any one of the following requirements:

(1) Has an engineering degree and one year of work experience in cargo tank structural or mechanical design;

(2) Is currently registered as a professional engineer by appropriate authority of a state of the United States or a province of Canada; or

(3) Has at least three years' experience in performing the duties of a Design Certifying Engineer prior to September 1, 1991.

Designated facility means a hazardous waste treatment, storage, or disposal facility that has been designated on the manifest by the generator.

District Commander means the District Commander of the Coast Guard, or his authorized representative, who has jurisdiction in the particular geographical area.

Division means a subdivision of a hazard class.

DOD means the U.S. Department of Defense.

Domestic transportation means transportation between places within the United States other than through a foreign country.

DOT or *Department* means U.S. Department of Transportation.

Drum means a flat-ended or convex-ended cylindrical packaging made of metal, fiberboard, plastic, plywood, or other suitable materials. This definition also includes packagings of other shapes made of metal or plastic (e.g., round taper-necked packagings or pail-shaped packagings) but does not include cylinders, jerricans, wooden barrels or bulk packagings.

Elevated temperature material means a material which, when offered for transportation or transported in a bulk packaging:

(1) Is in a liquid phase and at a temperature at or above 100 °C (212 °F);

(2) Is in a liquid phase with a flash point at or above 38 °C (100 °F) that is intentionally heated and offered for transportation or transported at or above its flash point; or

(3) Is in a solid phase and at a temperature at or above 240 °C (464 °F).

Engine means a locomotive propelled by any form of energy and used by a railroad.

EPA means U.S. Environmental Protection Agency.

Equivalent lithium content means, for a lithium-ion cell, the product of the rated capacity, in ampere-hours, of a lithium-ion cell times 0.3, with the result expressed in grams. The equivalent lithium content of a battery equals the sum of the grams of equivalent lithium content contained in the component cells of the battery.

Etiologic agent. See §173.134 of this subchapter.

EX number means a number preceded by the prefix "EX", assigned by the Associate Administrator, to an item that has been evaluated under the provisions of §173.56 of this subchapter.

Explosive. See §173.50 of this subchapter.

F means degree Fahrenheit.

Farmer means a person engaged in the production or raising of crops, poultry, or livestock.

Federal hazardous material transportation law means 49 U.S.C. 5101 *et seq.*

Ferry vessel means a vessel which is limited in its use to the carriage of deck passengers or vehicles or both, operates on a short run on a frequent schedule between two points over the most direct water route, other than in ocean or coastwise service, and is offered as a public service of a type normally attributed to a bridge or tunnel.

Filling density has the following meanings:

(1) For compressed gases in cylinders, see §173.304a(2) table note 1.

(2) For compressed gases in tank cars, see §173.314(c) table note 1.

(3) For compressed gases in cargo tanks and portable tanks, see §173.315(a) table note 1.

(4) For cryogenic liquids in cylinders, except hydrogen, see §173.316(c)(1).

(5) For hydrogen, cryogenic liquid in cylinders, see §173.316(c)(3) table note 1.

(6) For cryogenic liquids in cargo tanks, see § 173.318(f)(1).

(7) For cryogenic liquids in tank cars, see § 173.319(d)(1).

Flammable gas. See § 173.115 of this subchapter.

Flammable liquid. See § 173.120 of this subchapter.

Flammable solid. See § 173.124 of this subchapter.

Flash point. See § 173.120 of this subchapter.

Freight container means a reusable container having a volume of 64 cubic feet or more, designed and constructed to permit being lifted with its contents intact and intended primarily for containment of packages (in unit form) during transportation.

Fuel cell means an electrochemical device that converts the energy of the chemical reaction between a fuel, such as hydrogen or hydrogen rich gases, alcohols, or hydrocarbons, and an oxidant, such as air or oxygen, to direct current (d.c.) power, heat, and other reaction products.

Fuel cell cartridge or fuel cartridge means an article that stores fuel for discharge into the fuel cell through a valve(s) that controls the discharge of fuel into the fuel cell.

Fuel cell system means a fuel cell with an installed fuel cell cartridge together with wiring, valves, and other attachments that connect the fuel cell or cartridge to the device it powers. The fuel cell or cartridge may be so constructed that it forms an integral part of the device or may be removed and connected manually to the device.

Fuel tank means a tank other than a cargo tank, used to transport flammable or combustible liquid, or compressed gas for the purpose of supplying fuel for propulsion of the transport vehicle to which it is attached, or for the operation of other equipment on the transport vehicle.

Fumigated lading. See §§ 172.302(g) and 173.9.

Gas means a material which has a vapor pressure greater than 300 kPa (43.5 psia) at 50 °C (122 °F) or is completely gaseous at 20 °C (68 °F) at a standard pressure of 101.3 kPa (14.7 psia).

Gross weight or *Gross mass* means the weight of a packaging plus the weight of its contents.

Hazard class means the category of hazard assigned to a hazardous material under the definitional criteria of part 173 of this subchapter and the provisions of the § 172.101 table. A material may meet the defining criteria for more than one hazard class but is assigned to only one hazard class.

Hazard zone means one of four levels of hazard (Hazard Zones A through D) assigned to gases, as specified in § 173.116(a) of this subchapter, and one of two levels of hazards (Hazard Zones A and B) assigned to liquids that are poisonous by inhalation, as specified in § 173.133(a) of this subchapter. A hazard zone is based on the LC50 value for acute inhalation toxicity of gases and vapors, as specified in § 173.133(a).

Hazardous material means a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation law (49 U.S.C. 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in part 173 of subchapter C of this chapter.

Hazardous substance for the purposes of this subchapter, means a material, including its mixtures and solutions, that—

(1) Is listed in the appendix A to § 172.101 of this subchapter;

(2) Is in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) listed in the appendix A to § 172.101 of this subchapter; and

(3) When in a mixture or solution—

(i) For radionuclides, conforms to paragraph 7 of the appendix A to § 172.101.

(ii) For other than radionuclides, is in a concentration by weight which equals or exceeds the concentration corresponding to the RQ of the material, as shown in the following table:

RQ pounds (kilograms)	Concentration by weight	
	Percent	PPM
5000 (2270)	10	100,000
1000 (454)	2	20,000
100 (45.4)	0.2	2,000
10 (4.54)	0.02	200
1 (0.454)	0.002	20

The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance in appendix A to §172.101 of this subchapter, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

Hazardous waste, for the purposes of this chapter, means any material that is subject to the Hazardous Waste Manifest Requirements of the U.S. Environmental Protection Agency specified in 40 CFR part 262.

Hazmat means a hazardous material.

Hazmat employee means: (1) A person who is:

- (i) Employed on a full-time, part time, or temporary basis by a hazmat employer and who in the course of such full time, part time or temporary employment directly affects hazardous materials transportation safety;
- (ii) Self-employed (including an owner-operator of a motor vehicle, vessel, or aircraft) transporting hazardous materials in commerce who in the course of such self-employment directly affects hazardous materials transportation safety;
- (iii) A railroad signalman; or
- (iv) A railroad maintenance-of-way employee.

(2) This term includes an individual, employed on a full time, part time, or temporary basis by a hazmat employer, or who is self-employed, who during the course of employment:

- (i) Loads, unloads, or handles hazardous materials;
- (ii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce.

(iii) Prepares hazardous materials for transportation;

(iv) Is responsible for safety of transporting hazardous materials;

(v) Operates a vehicle used to transport hazardous materials.

Hazmat employer means:

(1) A person who employs or uses at least one hazmat employee on a full-time, part time, or temporary basis; and who:

- (i) Transports hazardous materials in commerce;
- (ii) Causes hazardous materials to be transported in commerce; or
- (iii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce;

(2) A person who is self-employed (including an owner-operator of a motor vehicle, vessel, or aircraft) transporting materials in commerce; and who:

- (i) Transports hazardous materials in commerce;
- (ii) Causes hazardous materials to be transported in commerce; or
- (iii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce;

(3) A department, agency, or instrumentality of the United States Government, or an authority of a State, political subdivision of a State, or an Indian tribe; and who:

- (i) Transports hazardous materials in commerce;
- (ii) Causes hazardous materials to be transported in commerce; or
- (iii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce.

Hermetically sealed means closed by fusion, gasketing, crimping, or equivalent means so that no gas or vapor can enter or escape.

Household waste means any solid waste (including garbage, trash, and sanitary waste from septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas). This term is not applicable to consolidated shipments of household hazardous materials transported from collection centers. A collection center is a central location where household waste is collected.

HMR means the Hazardous Materials Regulations, Parts 171 through 180 of this chapter.

IAEA means International Atomic Energy Agency.

IATA means International Air Transport Association.

ICAO means International Civil Aviation Organization.

IMO means International Maritime Organization.

Incorporated by reference or *IBR* means a publication or a portion of a publication that is made a part of the regulations of this subchapter. See §171.7.

Infectious substance (etiologic agent). See §173.134 of this subchapter.

Inner packaging means a packaging for which an outer packaging is required for transport. It does not include the inner receptacle of a composite packaging.

Inner receptacle means a receptacle which requires an outer packaging in order to perform its containment function. The inner receptacle may be an inner packaging of a combination packaging or the inner receptacle of a composite packaging.

Intermediate bulk container or *IBC* means a rigid or flexible portable packaging, other than a cylinder or portable tank, which is designed for mechanical handling. Standards for IB Cs manufactured in the United States are set forth in subparts N and O of part 178 of this subchapter.

Intermediate packaging means a packaging which encloses an inner pack-

aging or article and is itself enclosed in an outer packaging.

Intermodal container means a freight container designed and constructed to permit it to be used interchangeably in two or more modes of transport.

Intermodal portable tank or *IM portable tank* means a specific class of portable tanks designed primarily for international intermodal use.

International transportation means transportation—

(1) Between any place in the United States and any place in a foreign country;

(2) Between places in the United States through a foreign country; or

(3) Between places in one or more foreign countries through the United States.

Irritating material. See §173.132(a)(2) of this subchapter.

Jerrican means a metal or plastic packaging of rectangular or polygonal cross-section.

Large packaging means a packaging that—

(1) Consists of an outer packaging that contains articles or inner packagings;

(2) Is designated for mechanical handling;

(3) Exceeds 400 kg net mass or 450 liters (118.9 gallons) capacity;

(4) Has a volume of not more than 3 cubic meters (m³) (see §178.801(i) of this subchapter); and

(5) Conforms to the requirements for the construction, testing and marking of Large Packagings as specified in subparts P and Q of part 178 of this subchapter.

Limited quantity, when specified as such in a section applicable to a particular material, means the maximum amount of a hazardous material for which there is a specific labeling or packaging exception.

Lighter means a mechanically operated flame-producing device employing an ignition device and containing a Class 3 or a Division 2.1 material. For design, capacity, and filling density requirements for lighters containing a Division 2.1 material, see §173.308.

Lighter refill means a pressurized container that does not contain an ignition device but does contain a release

device and is intended for use as a replacement cartridge in a lighter or to refill a lighter with a Division 2.1 flammable gas fuel. For capacity limits, see § 173.306(h) of this subchapter.

Liquid means a material, other than an elevated temperature material, with a melting point or initial melting point of 20 °C (68 °F) or lower at a standard pressure of 101.3 kPa (14.7 psia). A viscous material for which a specific melting point cannot be determined must be subjected to the procedures specified in ASTM D 4359 "Standard Test Method for Determining Whether a Material is Liquid or Solid" (IBR, see § 171.7).

Liquid phase means a material that meets the definition of liquid when evaluated at the higher of the temperature at which it is offered for transportation or at which it is transported, not at the 38 °C (100 °F) temperature specified in ASTM D 4359 (IBR, see § 171.7).

Lithium content means the mass of lithium in the anode of a lithium metal or lithium alloy cell. The lithium content of a battery equals the sum of the grams of lithium content contained in the component cells of the battery. For a lithium-ion cell see the definition for "equivalent lithium content".

Loading incidental to movement means loading by carrier personnel or in the presence of carrier personnel of packaged or containerized hazardous material onto a transport vehicle, aircraft, or vessel for the purpose of transporting it, including the loading, blocking and bracing a hazardous materials package in a freight container or transport vehicle, and segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo. For a bulk packaging, *loading incidental to movement* means filling the packaging with a hazardous material for the purpose of transporting it. *Loading incidental to movement* includes transloading.

Magazine vessel means a vessel used for the receiving, storing, or dispensing of explosives.

Magnetic material. See § 173.21(d) of this subchapter.

Marine pollutant, means a material which is listed in appendix B to § 172.101 of this subchapter (also see § 171.4) and,

when in a solution or mixture of one or more marine pollutants, is packaged in a concentration which equals or exceeds:

(1) Ten percent by weight of the solution or mixture for materials listed in the appendix; or

(2) One percent by weight of the solution or mixture for materials that are identified as severe marine pollutants in the appendix.

Marking means a descriptive name, identification number, instructions, cautions, weight, specification, or UN marks, or combinations thereof, required by this subchapter on outer packagings of hazardous materials.

Material of trade means a hazardous material, other than a hazardous waste, that is carried on a motor vehicle—

(1) For the purpose of protecting the health and safety of the motor vehicle operator or passengers;

(2) For the purpose of supporting the operation or maintenance of a motor vehicle (including its auxiliary equipment); or

(3) By a private motor carrier (including vehicles operated by a rail carrier) in direct support of a principal business that is other than transportation by motor vehicle.

Material poisonous by inhalation or *Material toxic by inhalation* means:

(1) A gas meeting the defining criteria in § 173.115(c) of this subchapter and assigned to Hazard Zone A, B, C, or D in accordance with § 173.116(a) of this subchapter;

(2) A liquid (other than as a mist) meeting the defining criteria in § 173.132(a)(1)(iii) of this subchapter and assigned to Hazard Zone A or B in accordance with § 173.133(a) of this subchapter; or

(3) Any material identified as an inhalation hazard by a special provision in column 7 of the § 172.101 table.

Maximum allowable working pressure or *MAWP*: For DOT specification cargo tanks used to transport liquid hazardous materials, see § 178.320(a) of this subchapter.

Maximum capacity means the maximum inner volume of receptacles or packagings.

Maximum net mass means the allowable maximum net mass of contents in

a single packaging, or as used in subpart M of part 178 of this subchapter, the maximum combined mass of inner packaging, and the contents thereof.

Mechanical displacement meter prover means a mechanical device used in the oilfield service industry consisting of a pipe assembly that is used to calibrate the accuracy and performance of meters that measure the quantities of a product being pumped or transferred at facilities such as drilling locations, refineries, tank farms, and loading racks.

Metered delivery service means a cargo tank unloading operation conducted at a metered flow rate of 378.5 L (100 gallons) per minute or less through an attached delivery hose with a nominal inside diameter of 3.175 cm (1¼ inches) or less.

Miscellaneous hazardous material. See § 173.140 of this subchapter.

Mixture means a material composed of more than one chemical compound or element.

Mode means any of the following transportation methods; rail, highway, air, or water.

Motor vehicle includes a vehicle, machine, tractor, trailer, or semitrailer, or any combination thereof, propelled or drawn by mechanical power and used upon the highways in the transportation of passengers or property. It does not include a vehicle, locomotive, or car operated exclusively on a rail or rails, or a trolley bus operated by electric power derived from a fixed overhead wire, furnishing local passenger transportation similar to street-railway service.

Movement means the physical transfer of a hazardous material from one geographic location to another by rail car, aircraft, motor vehicle, or vessel.

Multiple-element gas container or *MEGC* means assemblies of UN cylinders, tubes, or bundles of cylinders interconnected by a manifold and assembled within a framework. The term includes all service equipment and structural equipment necessary for the transport of gases.

Name of contents means the proper shipping name as specified in § 172.101 of this subchapter.

Navigable waters means, for the purposes of this subchapter, waters of the

United States, including the territorial seas.

Non-bulk packaging means a packaging which has:

(1) A maximum capacity of 450 L (119 gallons) or less as a receptacle for a liquid;

(2) A maximum net mass of 400 kg (882 pounds) or less and a maximum capacity of 450 L (119 gallons) or less as a receptacle for a solid; or

(3) A water capacity of 454 kg (1000 pounds) or less as a receptacle for a gas as defined in § 173.115 of this subchapter.

Nonflammable gas. See § 173.115 of this subchapter.

N.O.S. means not otherwise specified.

N.O.S. description means a shipping description from the § 172.101 table which includes the abbreviation *n.o.s.*

NPT means an American Standard taper pipe thread conforming to the requirements of NBS Handbook H-28 (IBR, see § 171.7).

NRC (non-reusable container) means a packaging (container) whose reuse is restricted in accordance with the provisions of § 173.28 of this subchapter.

Occupied caboose means a rail car being used to transport non-passenger personnel.

Officer in Charge, Marine Inspection means a person from the civilian or military branch of the Coast Guard designated as such by the Commandant and who under the supervision and direction of the Coast Guard District Commander is in charge of a designated inspection zone for the performance of duties with respect to the enforcement and administration of title 52, Revised Statutes, acts amendatory thereof or supplemental thereto, rules and regulations thereunder, and the inspection required thereby.

Offshore supply vessel means a cargo vessel of less than 500 gross tons that regularly transports goods, supplies or equipment in support of exploration or production of offshore mineral or energy resources.

Operator means a person who controls the use of an aircraft, vessel, or vehicle.

Organic peroxide. See § 173.128 of this subchapter.

ORM means other regulated material. See § 173.144 of this subchapter.

Outage or *ullage* means the amount by which a packaging falls short of being liquid full, usually expressed in percent by volume.

Outer packaging means the outermost enclosure of a composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner receptacles or inner packagings.

Overpack, except as provided in subpart K of part 178 of this subchapter, means an enclosure that is used by a single consignor to provide protection or convenience in handling of a package or to consolidate two or more packages. *Overpack* does not include a transport vehicle, freight container, or aircraft unit load device. Examples of overpacks are one or more packages:

(1) Placed or stacked onto a load board such as a pallet and secured by strapping, shrink wrapping, stretch wrapping, or other suitable means; or

(2) Placed in a protective outer packaging such as a box or crate.

Oxidizer. See §173.127 of this subchapter.

Oxidizing gas means a gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does.

Oxygen generator (chemical) means a device containing chemicals that upon activation release oxygen as a product of chemical reaction.

Package or *Outside Package* means a packaging plus its contents. For radioactive materials, see §173.403 of this subchapter.

Packaging means a receptacle and any other components or materials necessary for the receptacle to perform its containment function in conformance with the minimum packing requirements of this subchapter. For radioactive materials packaging, see §173.403 of this subchapter.

Packing group means a grouping according to the degree of danger presented by hazardous materials. Packing Group I indicates great danger; Packing Group II, medium danger; Packing Group III, minor danger. See §172.101(f) of this subchapter.

Passenger (With respect to vessels and for the purposes of part 176 only) means

a person being carried on a vessel other than:

(1) The owner or his representative;

(2) The operator;

(3) A bona fide member of the crew engaged in the business of the vessel who has contributed no consideration for his carriage and who is paid for his services; or

(4) A guest who has not contributed any consideration directly or indirectly for his carriage.

Passenger-carrying aircraft means an aircraft that carries any person other than a crewmember, company employee, an authorized representative of the United States, or a person accompanying the shipment.

Passenger vessel means—

(1) A vessel subject to any of the requirements of the International Convention for the Safety of Life at Sea, 1974, which carries more than 12 passengers;

(2) A cargo vessel documented under the laws of the United States and not subject to that Convention, which carries more than 16 passengers;

(3) A cargo vessel of any foreign nation that extends reciprocal privileges and is not subject to that Convention and which carries more than 16 passengers; and

(4) A vessel engaged in a ferry operation and which carries passengers.

Person means an individual, corporation, company, association, firm, partnership, society, joint stock company; or a government, Indian tribe, or authority of a government or tribe offering a hazardous material for transportation in commerce or transporting a hazardous material to support a commercial enterprise. This term does not include the United States Postal Service or, for purposes of 49 U.S.C. 5123 and 5124, a Department, agency, or instrumentality of the government.

Person who offers or *offeror* means:

(1) Any person who does either or both of the following:

(i) Performs, or is responsible for performing, any pre-transportation function required under this subchapter for transportation of the hazardous material in commerce.

(ii) Tenders or makes the hazardous material available to a carrier for transportation in commerce.

(2) A carrier is not an offeror when it performs a function required by this subchapter as a condition of acceptance of a hazardous material for transportation in commerce (e.g., reviewing shipping papers, examining packages to ensure that they are in conformance with this subchapter, or preparing shipping documentation for its own use) or when it transfers a hazardous material to another carrier for continued transportation in commerce without performing a pre-transportation function.

PHMSA means the Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington, DC 20590.

Placarded car means a rail car which is placarded in accordance with the requirements of part 172 of this subchapter.

Poisonous gas. See §173.115 of this subchapter.

Poisonous materials. See §173.132 of this subchapter.

Portable tank means a bulk packaging (except a cylinder having a water capacity of 1000 pounds or less) designed primarily to be loaded onto, or on, or temporarily attached to a transport vehicle or ship and equipped with skids, mountings, or accessories to facilitate handling of the tank by mechanical means. It does not include a cargo tank, tank car, multi-unit tank car tank, or trailer carrying 3AX, 3AAX, or 3T cylinders.

Preferred route or *Preferred highway* is a highway for shipment of *highway route controlled quantities* of radioactive materials so designated by a State routing agency, and any Interstate System highway for which an alternative highway has not been designated by such State agency as provided by §397.103 of this title.

Pre-transportation function means a function specified in the HMR that is required to assure the safe transportation of a hazardous material in commerce, including—

(1) Determining the hazard class of a hazardous material.

(2) Selecting a hazardous materials packaging.

(3) Filling a hazardous materials packaging, including a bulk packaging.

(4) Securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material.

(5) Marking a package to indicate that it contains a hazardous material.

(6) Labeling a package to indicate that it contains a hazardous material.

(7) Preparing a shipping paper.

(8) Providing and maintaining emergency response information.

(9) Reviewing a shipping paper to verify compliance with the HMR or international equivalents.

(10) For each person importing a hazardous material into the United States, providing the shipper with timely and complete information as to the HMR requirements that will apply to the transportation of the material within the United States.

(11) Certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR.

(12) Loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle.

(13) Segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo.

(14) Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.

Primary hazard means the hazard class of a material as assigned in the §172.101 table.

Private track or *Private siding* means:

(i) Track located outside of a carrier's right-of-way, yard, or terminals where the carrier does not own the rails, ties, roadbed, or right-of-way, or

(ii) Track leased by a railroad to a lessee, where the lease provides for, and actual practice entails, exclusive use of that trackage by the lessee and/or a general system railroad for purpose of moving only cars shipped to or by the lessee, and where the lessor otherwise exercises no control over or responsibility for the trackage or the cars on the trackage.

Proper shipping name means the name of the hazardous material shown in Roman print (not italics) in §172.101 of this subchapter.

Psi means pounds per square inch.

Psia means pounds per square inch absolute.

Psig means pounds per square inch gauge.

Public vessel means a vessel owned by and being used in the public service of the United States. It does not include a vessel owned by the United States and engaged in a trade or commercial service or a vessel under contract or charter to the United States.

Pyrophoric liquid. See §173.124(b) of this subchapter.

Radioactive materials. See §173.403 of this subchapter for definitions relating to radioactive materials.

Rail car means a car designed to carry freight or non-passenger personnel by rail, and includes a box car, flat car, gondola car, hopper car, tank car, and occupied caboose.

Railroad means a person engaged in transportation by rail.

Receptacle means a containment vessel for receiving and holding materials, including any means of closing.

Reconditioned packaging. See §173.28 of this subchapter.

Registered Inspector means a person registered with the Department in accordance with subpart F of part 107 of this chapter who has the knowledge and ability to determine whether a cargo tank conforms to the applicable DOT specification. A *Registered Inspector* meets the knowledge and ability requirements of this section by meeting any one of the following requirements:

(1) Has an engineering degree and one year of work experience relating to the testing and inspection of cargo tanks;

(2) Has an associate degree in engineering and two years of work experience relating to the testing and inspection of cargo tanks;

(3) Has a high school diploma (or General Equivalency Diploma) and three years of work experience relating to the testing and inspection of cargo tanks; or

(4) Has at least three years' experience performing the duties of a Registered Inspector prior to September 1, 1991.

Regulated medical waste. See §173.134 of this subchapter.

Remanufactured packagings. See §173.28 of this subchapter.

Reportable quantity (RQ) for the purposes of this subchapter means the quantity specified in column 2 of the appendix to §172.101 for any material identified in column 1 of the appendix.

Research means investigation or experimentation aimed at the discovery of new theories or laws and the discovery and interpretation of facts or revision of accepted theories or laws in the light of new facts. Research does not include the application of existing technology to industrial endeavors.

Residue means the hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent practicable and before the packaging is either refilled or cleaned of hazardous material and purged to remove any hazardous vapors.

Reused packaging. See §173.28 of this subchapter.

SADT means self-accelerated decomposition temperature. See §173.21(f) of this subchapter.

Salvage packaging means a special packaging conforming to §173.3 of this subchapter into which damaged, defective, leaking, or non-conforming hazardous materials packages, or hazardous materials that have spilled or leaked, are placed for purposes of transport for recovery or disposal.

SCF (standard cubic foot) means one cubic foot of gas measured at 60 °F. and 14.7 psia.

Secretary means the Secretary of Transportation.

Self-defense spray means an aerosol or non-pressurized device that:

(1) Is intended to have an irritating or incapacitating effect on a person or animal; and

(2) Meets no hazard criteria other than for Class 9 (for example, a pepper spray; see §173.140(a) of this subchapter) and, for an aerosol, Division 2.1 or 2.2 (see §173.115 of this subchapter), except that it may contain not more than two percent by mass of a tear gas substance (e.g., chloroacetophenone (CN) or 0-chlorobenzylmalonitrile (CS); see §173.132(a)(2) of this subchapter.)

Settled pressure means the pressure exerted by the contents of a UN pressure receptacle in thermal and diffusive equilibrium.

Sharps. See §173.134 of this subchapter.

Shipping paper means a shipping order, bill of lading, manifest or other shipping document serving a similar purpose and prepared in accordance with subpart C of part 172 of this chapter.

Siftproof packaging means a packaging impermeable to dry contents, including fine solid material produced during transportation.

Single packaging means a non-bulk packaging other than a combination packaging.

Solid means a material which is not a gas or a liquid.

Solution means any homogeneous liquid mixture of two or more chemical compounds or elements that will not undergo any segregation under conditions normal to transportation.

Special permit means a document issued by the Associate Administrator, or other designated Department official, under the authority of 49 U.S.C. 5117 permitting a person to perform a function that is not otherwise permitted under subchapters A or C of this chapter, or other regulations issued under 49 U.S.C. 5101 *et seq.* (e.g., Federal Motor Carrier Safety routing requirements). The terms “special permit” and “exemption” have the same meaning for purposes of subchapters A or C of this chapter or other regulations issued under 49 U.S.C. 5101 through 5128.

Specification packaging means a packaging conforming to one of the specifications or standards for packagings in part 178 or part 179 of this subchapter.

Spontaneously combustible material. See §173.124(b) of this subchapter.

Stabilized means that the hazardous material is in a condition that precludes uncontrolled reaction. This may be achieved by methods such as adding an inhibiting chemical, degassing the hazardous material to remove dissolved oxygen and inerting the air space in the package, or maintaining the hazardous material under temperature control.

State means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mar-

iana Islands, the Virgin Islands, American Samoa, Guam, or any other territory or possession of the United States designated by the Secretary.

State-designated route means a preferred route selected in accordance with U.S. DOT “Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantities of Radioactive Materials” or an equivalent routing analysis which adequately considers overall risk to the public.

Storage incidental to movement means storage of a transport vehicle, freight container, or package containing a hazardous material by any person between the time that a carrier takes physical possession of the hazardous material for the purpose of transporting it in commerce until the package containing the hazardous material is physically delivered to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a private motor carrier, between the time that a motor vehicle driver takes physical possession of the hazardous material for the purpose of transporting it in commerce until the driver relinquishes possession of the package at its destination and is no longer responsible for performing functions subject to the HMR with respect to that particular package.

(1) *Storage incidental to movement* includes—

(i) Storage at the destination shown on a shipping document, including storage at a transloading facility, provided the shipping documentation identifies the shipment as a through-shipment and identifies the final destination or destinations of the hazardous material; and

(ii) Rail cars containing hazardous materials that are stored on track that does not meet the definition of “private track or siding” in §171.8, even if those cars have been delivered to the destination shown on the shipping document.

(2) Storage incidental to movement does not include storage of a hazardous material at its final destination as shown on a shipping document.

Stowage means the act of placing hazardous materials on board a vessel.

Strong outer packaging means the outermost enclosure that provides protection against the unintentional release of its contents. It is a packaging that is sturdy, durable, and constructed so that it will retain its contents under normal conditions of transportation. In addition, a strong outer packaging must meet the general packaging requirements of subpart B of part 173 of this subchapter but need not comply with the specification packaging requirements in part 178 of the subchapter. For transport by aircraft, a strong outer packaging is subject to § 173.27 of this subchapter. The terms "strong outside container" and "strong outside packaging" are synonymous with "strong outer packaging."

Subsidiary hazard means a hazard of a material other than the primary hazard. (See *primary hazard*).

Table in §172.101 or §172.101 table means the Hazardous Materials Table in §172.101 of this subchapter.

Technical name means a recognized chemical name or microbiological name currently used in scientific and technical handbooks, journals, and texts. Generic descriptions are authorized for use as technical names provided they readily identify the general chemical group, or microbiological group. Examples of acceptable generic chemical descriptions are organic phosphate compounds, petroleum aliphatic hydrocarbons and tertiary amines. For proficiency testing only, generic microbiological descriptions such as bacteria, mycobacteria, fungus, and viral samples may be used. Except for names which appear in subpart B of part 172 of this subchapter, trade names may not be used as technical names.

TOFC means trailer-on-flat-car.

Top shell means the tank car tank surface, excluding the head ends and bottom shell of the tank car tank.

Toxin. See §173.134 of this subchapter.

Trailership means a vessel, other than a carfloat, specifically equipped to carry motor transport vehicles and fitted with installed securing devices to tie down each vehicle. The term *trailership* includes *Roll-on/Roll-off (RO/RO)* vessels.

Train means one or more engines coupled with one or more rail cars, except

during switching operations or where the operation is that of classifying and assembling rail cars within a railroad yard for the purpose of making or breaking up trains.

Trainship means a vessel other than a rail car ferry or carfloat, specifically equipped to transport railroad vehicles, and fitted with installed securing devices to tie down each vehicle.

Transloading means the transfer of a hazardous material by any person from one bulk packaging to another bulk packaging, from a bulk packaging to a non-bulk packaging, or from a non-bulk packaging to a bulk packaging for the purpose of continuing the movement of the hazardous material in commerce.

Transport vehicle means a cargo-carrying vehicle such as an automobile, van, tractor, truck, semitrailer, tank car or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, rail car, etc.) is a separate transport vehicle.

Transportation or *transport* means the movement of property and loading, unloading, or storage incidental to that movement.

UFC means Uniform Freight Classification.

UN means United Nations.

UN cylinder means a transportable pressure receptacle with a water capacity not exceeding 150 L that has been marked and certified as conforming to the applicable requirements in part 178 of this subchapter.

UN portable tank means an intermodal tank having a capacity of more than 450 liters (118.9 gallons). It includes a shell fitted with service equipment and structural equipment, including stabilizing members external to the shell and skids, mountings or accessories to facilitate mechanical handling. A UN portable tank must be capable of being filled and discharged without the removal of its structural equipment and must be capable of being lifted when full. Cargo tanks, rail tank car tanks, non-metallic tanks, non-specification tanks, bulk bins, and IBCs and packagings made to cylinder specifications are not UN portable tanks.

UN pressure receptacle means a UN cylinder or tube.

UN Recommendations means the UN Recommendations on the Transport of Dangerous Goods (IBR, see §171.7).

UN standard packaging means a packaging conforming to standards in the UN Recommendations (IBR, see §171.7).

UN tube means a seamless transportable pressure receptacle with a water capacity exceeding 150 L but not more than 3,000 L that has been marked and certified as conforming to the requirements in part 178 of this subchapter.

Undeclared hazardous material means a hazardous material that is: (1) Subject to any of the hazard communication requirements in subparts C (Shipping Papers), D (Marking), E (Labeling), and F (Placarding) of Part 172 of this subchapter, or an alternative marking requirement in Part 173 of this subchapter (such as §§173.4(a)(10) and 173.6(c)); and (2) offered for transportation in commerce without any visible indication to the person accepting the hazardous material for transportation that a hazardous material is present, on either an accompanying shipping document, or the outside of a transport vehicle, freight container, or package.

Unintentional release means the escape of a hazardous material from a package on an occasion not anticipated or planned. This includes releases resulting from collision, package failures, human error, criminal activity, negligence, improper packing, or unusual conditions such as the operation of pressure relief devices as a result of over-pressurization, overfill or fire exposure. It does not include releases, such as venting of packages, where allowed, and the operational discharge of contents from packages.

Unit load device means any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo.

United States means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the Virgin Islands, American Samoa, Guam, or any other territory or possession of the United States designated by the Secretary.

Unloading incidental to movement means removing a packaged or containerized hazardous material from a

transport vehicle, aircraft, or vessel, or for a bulk packaging, emptying a hazardous material from the bulk packaging after the hazardous material has been delivered to the consignee when performed by carrier personnel or in the presence of carrier personnel or, in the case of a private motor carrier, while the driver of the motor vehicle from which the hazardous material is being unloaded immediately after movement is completed is present during the unloading operation. (Emptying a hazardous material from a bulk packaging while the packaging is on board a vessel is subject to separate regulations as delegated by Department of Homeland Security Delegation No. 0170.1 at 2(103).) *Unloading incidental to movement* includes transloading.

Vessel includes every description of watercraft, used or capable of being used as a means of transportation on the water.

Viscous liquid means a liquid material which has a measured viscosity in excess of 2500 centistokes at 25 °C. (77 °F.) when determined in accordance with the procedures specified in ASTM Method D 445-72 "Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)" or ASTM Method D 1200-70 "Viscosity of Paints, Varnishes, and Lacquers by Ford Viscosity Cup."

Volatility refers to the relative rate of evaporation of materials to assume the vapor state.

Water reactive material. See §173.124(c) of this subchapter.

Water resistant means having a degree of resistance to permeability by and damage caused by water in liquid form.

Wooden barrel means a packaging made of natural wood, of round cross-section, having convex walls, consisting of staves and heads and fitted with hoops.

Working pressure for purposes of UN pressure receptacles, means the settled pressure of a compressed gas at a reference temperature of 15 °C (59 °F).

W.T. means watertight.

[Amdt. 171-32, 41 FR 15994, Apr. 15, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §171.8, see the List of CFR

Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 171.9 Rules of construction.

(a) In this subchapter, unless the context requires otherwise:

(1) Words imparting the singular include the plural;

(2) Words imparting the plural include the singular; and

(3) Words imparting the masculine gender include the feminine;

(b) In this subchapter, the word: (1) "Shall" is used in an imperative sense;

(2) "Must" is used in an imperative sense;

(3) "Should" is used in a recommendatory sense;

(4) "May" is used in a permissive sense to state authority or permission to do the act described, and the words "no person may * * *" or "a person may not * * *" means that no person is required, authorized, or permitted to do the act described; and

(5) "Includes" is used as a word of inclusion not limitation.

[Amdt. 171-32, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 171-32A, 41 FR 40630, Sept. 20, 1976; Amdt. 171-121, 58 FR 51528, Oct. 1, 1993; 75 FR 60338, Sept. 30, 2010]

§ 171.10 Units of measure.

(a) *General.* To ensure compatibility with international transportation standards, most units of measure in this subchapter are expressed using the International System of Units ("SI" or metric). Where SI units appear, they are the regulatory standard. U.S. standard or customary units, which appear in parentheses following the SI units, are for information only and are not intended to be the regulatory standard.

(b) Abbreviations for SI units of measure generally used throughout this subchapter are as shown in paragraph (c) of this section. Customary units shown throughout this subchapter are generally not abbreviated.

(c) *Conversion values.* (1) Conversion values are provided in the following table and are based on values provided in ASTM E 380, "Standard for Metric Practice".

(2) If an exact conversion is needed, the following conversion table should be used.

TABLE OF CONVERSION FACTORS FOR SI UNITS

Measurement	SI to U.S. standard	U.S. standard to SI
Activity	1 TBq=27 Ci	1 Ci=0.037 TBq
Length	1 cm=0.3937008 in	1 in=2.540000 cm
	1 m=3.280840 ft	1 ft=0.3048000 m
Thickness	1 mm=0.03937008 in	1 in=25.40000 mm
Mass (weight)	1 kg=2.204622 lb	1 lb=0.4535924 kg
	1 g=0.03527397 oz	1 oz=28.34952 g
Pressure	1 kPa=0.1450377 psi	1 psi=6.894757 kPa
	1 Bar=100 kPa=14.504 psi	1 psi=0.06895 Bar
	1 kPa=7.5 mm Hg	
Radiation level	1 Sv/hr=100 rem/hr	1 rem/hr=0.01 Sv/hr
Volume (liquid)	1 L=0.2641720 gal	1 gal=3.785412 L
	1 mL=0.03381402 oz	1 oz=29.57353 mL
	1 m³=35.31466 ft³	1 ft³=0.02831685 m³
Density	1 kg/m³=0.06242797 lb/ft³	1 lb/ft³=16.01846 kg/m³
Force	1 Newton = 0.2248 Pound-force	1 Pound-force=4.483 N

Abbreviation for units of measure are as follows:
 Unit of measure and abbreviation:
 (SI): millimeter, mm; centimeter, cm; meter, m; gram, g; kilogram, kg; kiloPascal, kPa; liter, L; milliliter, mL; cubic meter, m³; Terabecquerel, TBq; Gigabecquerel, GBq; millisievert, mSv; Newton, N;
 (U.S.): Inch, in; foot, ft; ounce, oz; pound, lb; psig, psi; gallon, gal; cubic feet, ft³; Curie, Ci; millicurie, mCi; millirem, mrem.

[Amdt. 171-111, 56 FR 66159, Dec. 20, 1991, as amended by Amdt. 171-136, 60 FR 49108, Sept. 21, 1995; Amdt. 171-135, 60 FR 50302, Sept. 28, 1995; 66 FR 33335, June 21, 2001; 66 FR 45378, Aug. 28, 2001; 68 FR 75740, Dec. 31, 2003]

§ 171.11 [Reserved]

§ 171.12 North American Shipments.

(a) *Requirements for the use of the Transport Canada TDG Regulations.* (1) A hazardous material transported from Canada to the United States, from the United States to Canada, or transiting the United States to Canada or a foreign destination may be offered for transportation or transported by motor carrier and rail in accordance with the Transport Canada TDG Regulations (IBR, see § 171.7) as authorized in § 171.22, provided the requirements in §§ 171.22 and 171.23, as applicable, and this section are met. In addition, a cargo tank motor vehicle, portable tank or rail tank car authorized by the Transport Canada TDG Regulations may be used for transportation to, from, or within the United States provided the cargo tank motor vehicle, portable tank or rail tank car conforms to the applicable requirements of this section. Except as otherwise provided in this subpart and subpart C of this part, the requirements in parts 172, 173, and 178 of this subchapter do not apply for a material transported in accordance with the Transport Canada TDG Regulations.

(2) *General packaging requirements.* When the provisions of this subchapter require a DOT specification or UN standard packaging to be used for transporting a hazardous material, a packaging authorized by the Transport Canada TDG Regulations may be used, subject to the limitations of this part, and only if it is equivalent to the corresponding DOT specification or UN packaging (see § 173.24(d)(2) of this subchapter) authorized by this subchapter.

(3) *Bulk packagings.* A portable tank, cargo tank motor vehicle or rail tank car equivalent to a corresponding DOT specification and conforming to and authorized by the Transport Canada TDG Regulations may be used provided—

(i) An equivalent type of packaging is authorized for the hazardous material according to the § 172.101 table of this subchapter;

(ii) The portable tank, cargo tank motor vehicle or rail tank car conforms to the requirements of the applicable part 173 bulk packaging section

specified in the § 172.101 table for the material to be transported;

(iii) The portable tank, cargo tank motor vehicle or rail tank car conforms to the requirements of all assigned bulk packaging special provisions (B codes, and T and TP codes) in § 172.102 of this subchapter; and

(iv) The bulk packaging conforms to all applicable requirements of §§ 173.31, 173.32, 173.33 and 173.35 of this subchapter, and parts 177 and 180 of this subchapter. The periodic retests and inspections required by §§ 173.31, 173.32 and 173.33 of this subchapter may be performed in accordance with part 180 of this subchapter or in accordance with the requirements of the TDG Regulations provided that the intervals prescribed in part 180 of this subchapter are met.

(v) Rail tank cars must conform to the requirements of Canadian General Standards Board standard 43.147 (IBR, see § 171.7).

(4) *Cylinders.* When the provisions of this subchapter require that a DOT specification or a UN pressure receptacle must be used for a hazardous material, a packaging authorized by the Transport Canada TDG Regulations may be used only if it corresponds to the DOT specification or UN standard authorized by this subchapter. Unless otherwise excepted in this subchapter, a cylinder (including a UN pressure receptacle) may not be transported unless—

(i) The packaging is a UN pressure receptacle marked with the letters “CAN” for Canada as a country of manufacture or a country of approval or is a cylinder that was manufactured, inspected and tested in accordance with a DOT specification or a UN standard prescribed in part 178 of this subchapter, except that cylinders not conforming to these requirements must meet the requirements in § 171.23. Each cylinder must conform to the applicable requirements in part 173 of this subchapter for the hazardous material involved.

(ii) The packaging is a Canadian Transport Commission (CTC) specification cylinder manufactured, originally marked and approved in accordance with the CTC regulations and in full

conformance with the Transport Canada TDG Regulations.

(A) The CTC specification corresponds with a DOT specification and the cylinder markings are the same as those specified in this subchapter except that they were originally marked with the letters "CTC" in place of "DOT";

(B) The cylinder has been requalified under a program authorized by the Transport Canada TDG Regulations or requalified in accordance with the requirements in §180.205 within the prescribed requalification period provided for the corresponding DOT specification;

(C) When the regulations authorize a cylinder for a specific hazardous material with a specification marking prefix of "DOT", a cylinder marked "CTC" which otherwise bears the same markings that would be required of the specified "DOT" cylinder may be used; and

(D) Transport of the cylinder and the material it contains is in all other respects in conformance with the requirements of this subchapter (e.g. valve protection, filling requirements, operational requirements, etc.).

(5) *Class 1 (explosive) materials.* When transporting Class 1 (explosive) material, rail and motor carriers must comply with 49 CFR 1572.9 and 1572.11 to the extent the requirements apply.

(6) *Primary lithium batteries and cells.* Packages containing primary lithium batteries and cells that meet the exception in §172.102, Special Provision 188 or 189 of this subchapter must be marked "PRIMARY LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT" or "LITHIUM METAL BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT." The provisions of this paragraph do not apply to packages that contain 5 kg (11 pounds) net weight or less of primary lithium batteries cells that are contained in or packed with equipment.

(b) *Shipments to or from Mexico.* Unless otherwise excepted, hazardous materials shipments from Mexico to the United States or from the United States to Mexico must conform to all applicable requirements of this subchapter. When a hazardous material

that is a material poisonous by inhalation (see §171.8) is transported by highway or rail from Mexico to the United States, or from the United States to Mexico, the following requirements apply:

(1) The shipping description must include the words "Toxic Inhalation Hazard" or "Poison-Inhalation Hazard" or "Inhalation Hazard", as required in §172.203(m) of this subchapter.

(2) The material must be packaged in accordance with requirements of this subchapter.

(3) The package must be marked in accordance with §172.313 of this subchapter.

(4) Except as provided in paragraph (e)(5) of this section, the package must be labeled or placarded POISON GAS or POISON INHALATION HAZARD, as appropriate, in accordance with subparts E and F of this subchapter.

(5) A label or placard that conforms to the UN Recommendations (IBR, see §171.7) specifications for a "Division 2.3" or "Division 6.1" label or placard may be substituted for the POISON GAS or POISON INHALATION HAZARD label or placard required by §§172.400(a) and 172.504(e) of this subchapter on a package transported in a closed transport vehicle or freight container. The transport vehicle or freight container must be marked with identification numbers for the material, regardless of the total quantity contained in the transport vehicle or freight container, in the manner specified in §172.313(c) of this subchapter and placarded as required by subpart F of this subchapter.

[Amdt. 171-111, 55 FR 52472, Dec. 21, 1990]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §171.12, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 171.12a [Reserved]

§ 171.14 Transitional provisions for implementing certain requirements.

General. The purpose of the provisions of this section is to provide an orderly transition to certain new requirements so as to minimize any burdens associated with them.

(a) *Previously filled packages*—(1) *Packages filled prior to October 1, 1991.* Notwithstanding the marking and labeling provisions of subparts D and E, respectively, of part 172, and the packaging provisions of part 173 and subpart B of part 172 of this subchapter, a package may be offered for transportation and transported prior to October 1, 2001, if it—

(i) Conforms to the old requirements of this subchapter in effect on September 30, 1991;

(ii) Was filled with a hazardous material prior to October 1, 1991;

(iii) Is marked “Inhalation Hazard” if appropriate, in accordance with §172.313 of this subchapter or Special Provision 13, as assigned in the §172.101 table; and

(iv) Is not emptied and refilled on or after October 1, 1991.

(2) *Non-bulk packages filled prior to October 1, 1996.* Notwithstanding the packaging provisions of subpart B of part 172 and the packaging provisions of part 173 of this subchapter with respect to UN standard packagings, a non-bulk package other than a cylinder may be offered for transportation and transported domestically prior to October 1, 1999, if it—

(i) Conforms to the requirements of this subchapter in effect on September 30, 1996;

(ii) Was filled with a hazardous material prior to October 1, 1996; and

(iii) Is not emptied and refilled on or after October 1, 1996.

(b) [Reserved]

(c) *Non-specification fiber drums.* A non-specification fiber drum with a removable head is authorized for a liquid hazardous material in Packing Group III that is not poisonous by inhalation for which the packaging was authorized under the requirements of part 172 or part 173 of this subchapter in effect on September 30, 1991. This authorization expires on the date on which funds are authorized to be appropriated to carry out chapter 51 of title 49, United States Code (related to transportation of hazardous materials), for fiscal years beginning after September 30, 1997. Information concerning this funding authorization date may be obtained by contacting the Office of the Associate Administrator.

(d) A final rule published in the FEDERAL REGISTER on December 29, 2006, effective January 1, 2007, resulted in revisions to this subchapter. During the transition period, until January 1, 2008, as provided in paragraph (d)(1) of this section, a person may elect to comply with either the applicable requirements of this subchapter in effect on December 31, 2006, or the requirements published in the December 29, 2006 final rule.

(1) *Transition dates.* The effective date of the final rule published on December 29, 2006 is January 1, 2007. A delayed compliance date of January 1, 2008, is authorized. Unless otherwise specified, on and after January 1, 2008, all applicable regulatory requirements adopted in the final rule in effect on January 1, 2007, must be met.

(2) *Intermixing old and new requirements.* Marking, labeling, placarding, and shipping paper descriptions must conform to either the old requirements of this subchapter in effect on December 31, 2006, or the new requirements of this subchapter in the final rule without intermixing communication elements, except that intermixing is permitted during the applicable transition period for packaging, hazard communication and handling provisions, as follows:

(i) If either shipping names or identification numbers are identical, a shipping paper may display the old shipping description even if the package is marked and labeled under the new shipping description;

(ii) If either shipping names or identification numbers are identical, a shipping paper may display the new shipping description; and

(iii) Either old or new placards may be used regardless of whether old or new shipping descriptions, labels, and package markings are used.

(3) [Reserved]

(4) Until January 1, 2010, a hazardous material may be transported in an IM, IMO, or DOT Specification 51 portable tank in accordance with the T Codes (Special Provisions) assigned to a hazardous material in Column (7) of the §172.101 Table in effect on September 30, 2001.

(5) Proper shipping names that included the word “inhibited” prior to

the June 21, 2001 final rule in effect on October 1, 2001 are authorized on packagings and shipping papers in place of the word "stabilized" until October 1, 2007. Proper shipping names that included the word "compressed" prior to the final rule published on July 31, 2003 and effective on October 1, 2003 may continue to be shown on packagings and shipping papers until October 1, 2007.

(6) Section 172.202(a)(7) requires the number and types of packages to be indicated on shipping papers. Until October 1, 2007, a person may elect to comply with the requirements for the number and type of packages in effect on September 30, 2003.

(e) The shipping description sequences in effect on December 31, 2006, may be used until January 1, 2013.

(f) Except for transportation by highway, a Division 5.2 label and a Division 5.2 placard conforming to the specifications in §§172.427 and 172.552, respectively, of this subchapter in effect on December 31, 2006, may be used until January 1, 2011. For transportation by highway, a Division 5.2 placard conforming to the specifications in §172.552 of this subchapter in effect on December 31, 2006 may be used until January 1, 2014.

(g) The Class 3 and Division 6.1 classification criteria and packing group assignments in effect on December 31, 2006, may be used until January 1, 2012.

(h) The proper shipping name "Gasohol gasoline mixed with ethyl alcohol, with not more than 20 percent alcohol" in effect on January 28, 2008, may continue to be used until October 1, 2010. Effective October 1, 2010, the new proper shipping name "Ethanol and gasoline mixture or ethanol and motor spirit mixture or ethanol and petrol mixture," and the revised proper shipping name "Gasohol gasoline mixed with ethyl alcohol, with not more than 10% alcohol" must be used, as appropriate.

[Amdt. 171-131, 59 FR 67406, Dec. 29, 1994]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §171.14, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

Subpart B—Incident Reporting, Notification, BOE Approvals and Authorization

§171.15 Immediate notice of certain hazardous materials incidents.

(a) *General.* As soon as practical but no later than 12 hours after the occurrence of any incident described in paragraph (b) of this section, each person in physical possession of the hazardous material must provide notice to the National Response Center (NRC) by telephone at 800-424-8802 (toll free) or 202-267-2675 (toll call) or online at <http://www.nrc.uscg.mil>. Notice involving an infectious substance (etiologic agent) may be given to the Director, Centers for Disease Control and Prevention (CDC), U.S. Public Health Service, Atlanta, GA, 800-232-0124 (toll free), in place of notice to the NRC. Each notice must include the following information:

- (1) Name of reporter;
- (2) Name and address of person represented by reporter;
- (3) Phone number where reporter can be contacted;
- (4) Date, time, and location of incident;
- (5) The extent of injury, if any;
- (6) Class or division, proper shipping name, and quantity of hazardous materials involved, if such information is available; and
- (7) Type of incident and nature of hazardous material involvement and whether a continuing danger to life exists at the scene.

(b) *Reportable incident.* A telephone report is required whenever any of the following occurs during the course of transportation in commerce (including loading, unloading, and temporary storage):

- (1) As a direct result of a hazardous material—
 - (i) A person is killed;
 - (ii) A person receives an injury requiring admittance to a hospital;
 - (iii) The general public is evacuated for one hour or more;
 - (iv) A major transportation artery or facility is closed or shut down for one hour or more; or
 - (v) The operational flight pattern or routine of an aircraft is altered;

§ 171.16

49 CFR Ch. I (10–1–10 Edition)

(2) Fire, breakage, spillage, or suspected radioactive contamination occurs involving a radioactive material (see also §176.48 of this subchapter);

(3) Fire, breakage, spillage, or suspected contamination occurs involving an infectious substance other than a regulated medical waste;

(4) A release of a marine pollutant occurs in a quantity exceeding 450 L (119 gallons) for a liquid or 400 kg (882 pounds) for a solid;

(5) A situation exists of such a nature (e.g., a continuing danger to life exists at the scene of the incident) that, in the judgment of the person in possession of the hazardous material, it should be reported to the NRC even though it does not meet the criteria of paragraphs (b)(1), (2), (3) or (4) of this section; or

(6) During transportation by aircraft, a fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a battery or battery-powered device.

(c) *Written report.* Each person making a report under this section must also make the report required by §171.16 of this subpart.

NOTE TO §171.15: Under 40 CFR 302.6, EPA requires persons in charge of facilities (including transport vehicles, vessels, and aircraft) to report any release of a hazardous substance in a quantity equal to or greater than its reportable quantity, as soon as that person has knowledge of the release, to DOT's National Response Center at (toll free) 800-424-8802 or (toll) 202-267-2675.

[68 FR 67759, Dec. 3, 2003, as amended at 72 FR 55684, Oct. 1, 2007; 74 FR 2233, Jan. 14, 2009; 74 FR 53186, Oct. 16, 2009]

§ 171.16 Detailed hazardous materials incident reports.

(a) *General.* Each person in physical possession of a hazardous material at the time that any of the following incidents occurs during transportation (including loading, unloading, and temporary storage) must submit a Hazardous Materials Incident Report on DOT Form F 5800.1 (01/2004) within 30 days of discovery of the incident:

(1) Any of the circumstances set forth in §171.15(b);

(2) An unintentional release of a hazardous material or the discharge of any quantity of hazardous waste;

(3) A specification cargo tank with a capacity of 1,000 gallons or greater containing any hazardous material suffers structural damage to the lading retention system or damage that requires repair to a system intended to protect the lading retention system, even if there is no release of hazardous material;

(4) An undeclared hazardous material is discovered; or

(5) A fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a battery or battery-powered device.

(b) *Providing and retaining copies of the report.* Each person reporting under this section must—

(1) Submit a written Hazardous Materials Incident Report to the Information Systems Manager, PHH-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, DC 20590-0001, or an electronic Hazardous Material Incident Report to the Information System Manager, DHM-63, Research and Special Programs Administration, Department of Transportation, Washington, DC 20590-0001 at <http://hazmat.dot.gov>;

(2) For an incident involving transportation by aircraft, submit a written or electronic copy of the Hazardous Materials Incident Report to the FAA Security Field Office nearest the location of the incident; and

(3) Retain a written or electronic copy of the Hazardous Materials Incident Report for a period of two years at the reporting person's principal place of business. If the written or electronic Hazardous Materials Incident Report is maintained at other than the reporting person's principal place of business, the report must be made available at the reporting person's principal place of business within 24 hours of a request

for the report by an authorized representative or special agent of the Department of Transportation.

(c) *Updating the incident report.* A Hazardous Materials Incident Report must be updated within one year of the date of occurrence of the incident whenever:

(1) A death results from injury caused by a hazardous material;

(2) There was a misidentification of the hazardous material or package information on a prior incident report;

(3) Damage, loss or related cost that was not known when the initial incident report was filed becomes known; or

(4) Damage, loss, or related cost changes by \$25,000 or more, or 10% of the prior total estimate, whichever is greater.

(d) *Exceptions.* Unless a telephone report is required under the provisions of §171.15 of this part, the requirements of paragraphs (a), (b), and (c) of this section do not apply to the following incidents:

(1) A release of a minimal amount of material from—

(i) A vent, for materials for which venting is authorized;

(ii) The routine operation of a seal, pump, compressor, or valve; or

(iii) Connection or disconnection of loading or unloading lines, provided that the release does not result in property damage.

(2) An unintentional release of hazardous material when:

(i) The material is properly classed as—

(A) ORM-D; or

(B) a Packing Group III material in Class or Division 3, 4, 5, 6.1, 8, or 9;

(ii) Each package has a capacity of less than 20 liters (5.2 gallons) for liquids or less than 30 kg (66 pounds) for solids;

(iii) The total aggregate release is less than 20 liters (5.2 gallons) for liquids or less than 30 kg (66 pounds) for solids; and

(iv) The material is not—

(A) Offered for transportation or transported by aircraft,

(B) A hazardous waste, or

(C) An undeclared hazardous material.

(3) An undeclared hazardous material discovered in an air passenger's checked or carry-on baggage during the airport screening process. (For discrepancy reporting by carriers, see §175.31 of this subchapter.)

[68 FR 67759, Dec. 3, 2003; 69 FR 30119, May 26, 2004, as amended at 70 FR 56091, Sept. 23, 2005; 74 FR 2233, Jan. 14, 2009]

§§ 171.17–171.18 [Reserved]

§ 171.19 Approvals or authorizations issued by the Bureau of Explosives.

Effective December 31, 1998, approvals or authorizations issued by the Bureau of Explosives (BOE), other than those issued under part 179 of this subchapter, are no longer valid.

[63 FR 37459, July 10, 1998]

§ 171.20 Submission of Examination Reports.

(a) When it is required in this subchapter that the issuance of an approval by the Associate Administrator be based on an examination by the Bureau of Explosives (or any other test facility recognized by PHMSA), it is the responsibility of the applicant to submit the results of the examination to the Associate Administrator.

(b) Applications for approval submitted under paragraph (a) of this section, must be submitted to the Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Washington, DC 20590-0001.

(c) Any applicant for an approval aggrieved by an action taken by the Associate Administrator, under this subpart may file an appeal with the Administrator, PHMSA within 30 days of service of notification of a denial.

[Amdt. 171-54, 45 FR 32692, May 19, 1980, as amended by Amdt. 171-66, 47 FR 43064, Sept. 30, 1982; Amdt. 171-109, 55 FR 39978, Oct. 1, 1990; Amdt. 171-111, 56 FR 66162, Dec. 20, 1991; 66 FR 45378, Aug. 28, 2001]

§ 171.21 Assistance in investigations and special studies.

(a) A shipper, carrier, package owner, package manufacturer or certifier, repair facility, or person reporting an incident under the provisions of §171.16 must:

(1) Make all records and information pertaining to the incident available to an authorized representative or special agent of the Department of Transportation upon request; and

(2) Give an authorized representative or special agent of the Department of Transportation reasonable assistance in the investigation of the incident.

(b) If an authorized representative or special agent of the Department of Transportation makes an inquiry of a person required to complete an incident report in connection with a study of incidents, the person shall:

(1) Respond to the inquiry within 30 days after its receipt or within such other time as the inquiry may specify; and

(2) Provide true and complete answers to any questions included in the inquiry.

[68 FR 67760, Dec. 3, 2003]

Subpart C—Authorization and Requirements for the Use of International Transport Standards and Regulations

SOURCE: 72 FR 25172, May 3, 2007, unless otherwise noted.

§ 171.22 Authorization and conditions for the use of international standards and regulations.

(a) *Authorized international standards and regulations.* This subpart authorizes, with certain conditions and limitations, the offering for transportation and the transportation in commerce of hazardous materials in accordance with the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), the International Maritime Dangerous Goods Code (IMDG Code), Transport Canada's Transportation of Dangerous Goods Regulations (Transport Canada TDG Regulations), and the International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material (IAEA Regulations) (IBR, see § 171.7).

(b) *Limitations on the use of international standards and regulations.* A hazardous material that is offered for transportation or transported in ac-

cordance with the international standards and regulations authorized in paragraph (a) of this section—

(1) Is subject to the requirements of the applicable international standard or regulation and must be offered for transportation or transported in conformance with the applicable standard or regulation; and

(2) Must conform to all applicable requirements of this subpart.

(c) *Materials excepted from regulation under international standards and regulations.* A material designated as a hazardous material under this subchapter, but excepted from or not subject to the international transport standards and regulations authorized in paragraph (a) of this section (e.g., paragraph 1.16 of the Transport Canada TDG Regulations excepts from regulation quantities of hazardous materials less than or equal to 500 kg gross transported by rail) must be transported in accordance with all applicable requirements of this subchapter.

(d) *Materials not regulated under this subchapter.* Materials not designated as hazardous materials under this subchapter but regulated by an international transport standard or regulation authorized in paragraph (a) of this section may be offered for transportation and transported in the United States in full compliance (i.e., packaged, marked, labeled, classed, described, stowed, segregated, secured) with the applicable international transport standard or regulation.

(e) *Forbidden materials.* No person may offer for transportation or transport a hazardous material that is a forbidden material or package as designated in—

(1) Section 173.21 of this subchapter;

(2) Column (3) of the § 172.101 Table of this subchapter;

(3) Column (9A) of the § 172.101 Table of this subchapter when offered for transportation or transported on passenger aircraft or passenger railcar; or

(4) Column (9B) of the § 172.101 Table of this subchapter when offered for transportation or transported by cargo aircraft.

(f) *Complete information and certification.* (1) Except for shipments into

the United States from Canada conforming to § 171.12, each person importing a hazardous material into the United States must provide the forwarding agent at the place of entry into the United States timely and complete written information as to the requirements of this subchapter applicable to the particular shipment.

(2) After May 4, 2009, the shipper, directly or through the forwarding agent at the place of entry, must provide the initial U.S. carrier with the shipper's certification required by § 172.204 of this subchapter, unless the shipment is otherwise excepted from the certification requirement. Except for shipments for which the certification requirement does not apply, a carrier may not accept a hazardous material for transportation unless provided a shipper's certification.

(3) All shipping paper information and package markings required in accordance with this subchapter must be in English. The use of shipping papers and a package marked with both English and a language other than English, in order to dually comply with this subchapter and the regulations of a foreign entity, is permitted under this subchapter.

(4) Each person who provides for transportation or receives for transportation (see §§ 174.24, 175.30, 176.24 and 177.817 of this subchapter) a shipping paper must retain a copy of the shipping paper or an electronic image thereof that is accessible at or through its principal place of business in accordance with § 172.201(e) of this part.

(g) *Additional requirements for the use of international standards and regulations.* All shipments offered for transportation or transported in the United States in accordance with this subpart must conform to the following requirements of this subchapter, as applicable:

(1) The emergency response information requirements in subpart G of part 172 of this subchapter;

(2) The training requirements in subpart H of part 172 of this subchapter, including function-specific training in the use of the international transport standards and regulations authorized in paragraph (a) of this section, as applicable;

(3) The security requirements in subpart I of part 172 of this subchapter;

(4) The incident reporting requirements in §§ 171.15 and 171.16 of this part for incidents occurring within the jurisdiction of the United States including on board vessels in the navigable waters of the United States and aboard aircraft of United States registry anywhere in air commerce;

(5) For export shipments, the general packaging requirements in §§ 173.24 and 173.24a of this subchapter;

(6) For export shipments, the requirements for the reuse, reconditioning, and remanufacture of packagings in § 173.28 of this subchapter; and

(7) The registration requirements in subpart G of part 107 of this chapter.

[72 FR 25172, May 3, 2007, as amended at 72 FR 55091 Sept. 28, 2007; 74 FR 53186, Oct. 16, 2009]

§ 171.23 Requirements for specific materials and packagings transported under the ICAO Technical Instructions, IMDG Code, Transport Canada TDG Regulations, or the IAEA Regulations.

All shipments offered for transportation or transported in the United States under the ICAO Technical Instructions, IMDG Code, Transport Canada TDG Regulations, or the IAEA Regulations (IBR, see § 171.7) must conform to the requirements of this section, as applicable.

(a) *Conditions and requirements for cylinders*—(1) Except as provided in this paragraph, a filled cylinder (pressure receptacle) manufactured to other than a DOT specification or a UN standard in accordance with part 178 of this subchapter, or a DOT exemption or special permit cylinder or a cylinder used as a fire extinguisher in conformance with § 173.309(a) of this subchapter, may not be transported to, from, or within the United States.

(2) Cylinders (including UN pressure receptacles) transported to, from, or within the United States must conform to the applicable requirements of this subchapter. Unless otherwise excepted in this subchapter, a cylinder must not be transported unless—

(i) The cylinder is manufactured, inspected and tested in accordance with a DOT specification or a UN standard

prescribed in part 178 of this subchapter, except that cylinders not conforming to these requirements must meet the requirements in paragraphs (a)(3), (a)(4) or (a)(5) of this section;

(ii) The cylinder is equipped with a pressure relief device in accordance with §173.301(f) of this subchapter and conforms to the applicable requirements in part 173 of this subchapter for the hazardous material involved;

(iii) The openings on an aluminum cylinder in oxygen service conform to the requirements of this paragraph, except when the cylinder is used for aircraft parts or used aboard an aircraft in accordance with the applicable airworthiness requirements and operating regulations. An aluminum DOT specification cylinder must have an opening configured with straight (parallel) threads. A UN pressure receptacle may have straight (parallel) or tapered threads provided the UN pressure receptacle is marked with the thread type, e.g. "17E, 25E, 18P, or 25P" and fitted with the properly marked valve; and

(iv) A UN pressure receptacle is marked with "USA" as a country of approval in conformance with §§178.69 and 178.70 of this subchapter.

(3) Importation of cylinders for discharge within a single port area: A cylinder manufactured to other than a DOT specification or UN standard in accordance with part 178 of this subchapter and certified as being in conformance with the transportation regulations of another country may be authorized, upon written request to and approval by the Associate Administrator, for transportation within a single port area, provided—

(i) The cylinder is transported in a closed freight container;

(ii) The cylinder is certified by the importer to provide a level of safety at least equivalent to that required by the regulations in this subchapter for a comparable DOT specification or UN cylinder; and

(iii) The cylinder is not refilled for export unless in compliance with paragraph (a)(4) of this section.

(4) Filling of cylinders for export or for use on board a vessel: A cylinder not manufactured, inspected, tested and marked in accordance with part 178

of this subchapter, or a cylinder manufactured to other than a UN standard, DOT specification, exemption or special permit, may be filled with a gas in the United States and offered for transportation and transported for export or alternatively, for use on board a vessel, if the following conditions are met:

(i) The cylinder has been requalified and marked with the month and year of requalification in accordance with subpart C of part 180 of this subchapter, or has been requalified as authorized by the Associate Administrator;

(ii) In addition to other requirements of this subchapter, the maximum filling density, service pressure, and pressure relief device for each cylinder conform to the requirements of this part for the gas involved; and

(iii) The bill of lading or other shipping paper identifies the cylinder and includes the following certification: "This cylinder has (These cylinders have) been qualified, as required, and filled in accordance with the DOT requirements for export."

(5) Cylinders not equipped with pressure relief devices: A DOT specification or a UN cylinder manufactured, inspected, tested and marked in accordance with part 178 of this subchapter and otherwise conforms to the requirements of part 173 for the gas involved, except that the cylinder is not equipped with a pressure relief device may be filled with a gas and offered for transportation and transported for export if the following conditions are met:

(i) Each DOT specification cylinder or UN pressure receptacle must be plainly and durably marked "For Export Only";

(ii) The shipping paper must carry the following certification: "This cylinder has (These cylinders have) been retested and refilled in accordance with the DOT requirements for export."; and

(iii) The emergency response information provided with the shipment and available from the emergency response telephone contact person must indicate that the pressure receptacles are not fitted with pressure relief devices and provide appropriate guidance for exposure to fire.

(b) *Conditions and requirements specific to certain materials*—(1) *Aerosols*. Except for a limited quantity of a compressed gas in a container of not more than 4 fluid ounces capacity meeting the requirements in §173.306(a)(1) of this subchapter, the proper shipping name “Aerosol,” UN1950, may be used only for a non-refillable receptacle containing a gas compressed, liquefied, or dissolved under pressure the sole purpose of which is to expel a nonpoisonous (other than Division 6.1, Packing Group III material) liquid, paste, or powder and fitted with a self-closing release device (see §171.8). In addition, an aerosol must be in a metal packaging when the packaging exceeds 7.22 cubic inches.

(2) *Air bag inflator, air bag module and seat-belt pretensioner*. For each approved air bag inflator, air bag module and seat-belt pretensioner, the shipping paper description must conform to the requirements in §173.166(c) of this subchapter.

(i) The EX number or product code must be included in association with the basic shipping description. When a product code is used, it must be traceable to the specific EX number assigned to the inflator, module or seat-belt pretensioner by the Associate Administrator. The EX number or product code is not required to be marked on the outside package.

(ii) The proper shipping name “Articles, pyrotechnic for technical purposes, UN0431” must be used for all air bag inflators, air bag modules, and seat-belt pretensioners meeting the criteria for a Division 1.4G material.

(3) *Chemical oxygen generators*. Chemical oxygen generators must be approved, classed, described, packaged, and transported in accordance with the requirements of this subchapter.

(4) *Class 1 (explosive) materials*. Prior to being transported, Class 1 (explosive) materials must be approved by the Associate Administrator in accordance with §173.56 of this subchapter. Each package containing a Class 1 (explosive) material must conform to the marking requirements in §172.320 of this subchapter.

(5) *Hazardous substances*. A material meeting the definition of a hazardous substance as defined in §171.8, must

conform to the shipping paper requirements in §172.203(c) of this subchapter and the marking requirements in §172.324 of this subchapter:

(i) The proper shipping name must identify the hazardous substance by name, or the name of the substance must be entered in parentheses in association with the basic description and marked on the package in association with the proper shipping name. If the hazardous substance meets the definition for a hazardous waste, the waste code (for example, D001), may be used to identify the hazardous substance;

(ii) The shipping paper and the package markings must identify at least two hazardous substances with the lowest reportable quantities (RQs) when the material contains two or more hazardous substances; and

(iii) The letters “RQ” must be entered on the shipping paper either before or after the basic description, and marked on the package in association with the proper shipping name for each hazardous substance listed.

(6) *Hazardous wastes*. A material meeting the definition of a hazardous waste (see §171.8) must conform to the following:

(i) The shipping paper and the package markings must include the word “Waste” immediately preceding the proper shipping name;

(ii) The shipping paper must be retained by the shipper and by each carrier for three years after the material is accepted by the initial carrier (see §172.205(e)(5)); and

(iii) A hazardous waste manifest must be completed in accordance with §172.205 of this subchapter.

(7) *Marine pollutants*. Except for marine pollutants (see §171.8) transported in accordance with the IMDG Code, marine pollutants transported in bulk packages must meet the shipping paper requirements in §172.203(l) of this subchapter and the package marking requirements in §172.322 of this subchapter.

(8) *Organic peroxides*. Organic peroxides not identified by technical name in the Organic Peroxide Table in §173.225(b) of this subchapter must be approved by the Associate Administrator in accordance with §173.128(d) of this subchapter.

(9) *Poisonous materials, Division 6.1.* Division 6.1 hazardous materials transported as limited quantities are not excepted from labeling (see § 173.153(b)).

(10) *Poisonous by inhalation materials.* A material poisonous by inhalation (see § 171.8) must conform to the following requirements:

(i) The words "Poison-Inhalation Hazard" or "Toxic-Inhalation Hazard" and the words "Zone A," "Zone B," "Zone C," or "Zone D" for gases, or "Zone A" or "Zone B" for liquids, as appropriate, must be entered on the shipping paper immediately following the basic shipping description. The word "Poison" or "Toxic" or the phrase "Poison-Inhalation Hazard" or "Toxic-Inhalation Hazard" need not be repeated if it otherwise appears in the shipping description;

(ii) The material must be packaged in accordance with the requirements of this subchapter;

(iii) The package must be marked in accordance with § 172.313 of this subchapter; and

(iv) Except as provided in subparagraph (B) of this paragraph (b)(10)(iv) and for a package containing anhydrous ammonia prepared in accordance with the Transport Canada TDG Regulations, the package must be labeled or placarded with POISON INHALATION HAZARD or POISON GAS, as appropriate, in accordance with Subparts E and F of part 172 of this subchapter.

(A) For a package transported in accordance with the IMDG Code in a closed transport vehicle or freight container, a label or placard conforming to the IMDG Code specifications for a "Class 2.3" or "Class 6.1" label or placard may be substituted for the POISON GAS or POISON INHALATION HAZARD label or placard, as appropriate. The transport vehicle or freight container must be marked with the identification numbers for the hazardous material, regardless of the total quantity contained in the transport vehicle or freight container, in the manner specified in § 172.313(c) of this subchapter and placarded as required by subpart F of part 172 of this subchapter.

(B) For a package transported in accordance with the Transport Canada TDG Regulations in a closed transport

vehicle or freight container, a label or placard conforming to the TDG Regulations specifications for a "Class 2.3" or "Class 6.1" label or placard may be substituted for the POISON GAS or POISON INHALATION HAZARD label or placard, as appropriate. The transport vehicle or freight container must be marked with the identification numbers for the hazardous material, regardless of the total quantity contained in the transport vehicle or freight container, in the manner specified in § 172.313(c) of this subchapter and placarded as required by subpart F of part 172 of this subchapter. While in transportation in the United States, the transport vehicle or freight container may also be placarded in accordance with the appropriate Transport Canada TDG Regulations in addition to being placarded with the POISON GAS or POISON INHALATION HAZARD placards.

(11) *Class 7 (radioactive) materials.* (i) Highway route controlled quantities (see § 173.403 of this subchapter) must be shipped in accordance with §§ 172.203(d)(4) and (d)(10); 172.507, and 173.22(c) of this subchapter;

(ii) For fissile materials and Type B, Type B(U), and Type B(M) packagings, the competent authority certification and any necessary revalidation must be obtained from the appropriate competent authorities as specified in §§ 173.471, 173.472, and 173.473 of this subchapter, and all requirements of the certificates and revalidations must be met;

(iii) Type A package contents are limited in accordance with § 173.431 of this subchapter;

(iv) The country of origin for the shipment must have adopted the edition of TS-R-1 of the IAEA Regulations referenced in § 171.7;

(v) The shipment must conform to the requirements of § 173.448, when applicable;

(vi) The definition for "radioactive material" in § 173.403 of this subchapter must be applied to radioactive materials transported under the provisions of this subpart;

(vii) Except for limited quantities, the shipment must conform to the requirements of § 172.204(c)(4) of this subchapter; and

(viii) Excepted packages of radioactive material, instruments or articles, or articles containing natural uranium or thorium must conform to the requirements of §§ 173.421, 173.424, or 173.426 of this subchapter, as appropriate.

(12) *Self-reactive materials.* Self-reactive materials not identified by technical name in the Self-reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with § 173.124(a)(2)(iii) of this subchapter.

[72 FR 25172, May 3, 2007, as amended at 72 FR 55684, Oct. 1, 2007; 73 FR 57004, Oct. 1, 2008]

§ 171.24 Additional requirements for the use of the ICAO Technical Instructions.

(a) A hazardous material that is offered for transportation or transported within the United States by aircraft, and by motor vehicle or rail either before or after being transported by aircraft in accordance with the ICAO Technical Instructions (IBR, see § 171.7), as authorized in paragraph (a) of § 171.22, must conform to the requirements in § 171.22, as applicable, and this section.

(b) Any person who offers for transportation or transports a hazardous material in accordance with the ICAO Technical Instructions must comply with the following additional conditions and requirements:

(1) All applicable requirements in parts 171 and 175 of this subchapter (also see 14 CFR 121.135, 121.401, 121.433a, 135.323, 135.327 and 135.333);

(2) The quantity limits prescribed in the ICAO Technical Instructions for transportation by passenger-carrying or cargo aircraft, as applicable;

(3) The conditions or requirements of a United States variation, when specified in the ICAO Technical Instructions.

(c) *Highway transportation.* For transportation by highway prior to or after transportation by aircraft, a shipment must conform to the applicable requirements of part 177 of this subchapter, and the motor vehicle must be placarded in accordance with subpart F of part 172.

(d) *Conditions and requirements specific to certain materials.* Hazardous mate-

rials offered for transportation or transported in accordance with the ICAO Technical Instructions must conform to the following specific conditions and requirements, as applicable:

(1) *Batteries*—(i) *Nonspillable wet electric storage batteries.* Nonspillable wet electric storage batteries are not subject to the requirements of this subchapter provided—

(A) The battery meets the conditions specified in Special Provision 67 of the ICAO Technical Instructions;

(B) The battery, its outer packaging, and any overpack are plainly and durably marked “NONSPILLABLE” or “NONSPILLABLE BATTERY”; and

(C) The batteries or battery assemblies are offered for transportation or transported in a manner that prevents short circuiting or forced discharge, including, but not limited to, protection of exposed terminals.

(ii) *Primary lithium batteries and cells.* Primary lithium batteries and cells are forbidden for transportation aboard passenger-carrying aircraft. Equipment containing or packed with primary lithium batteries or cells are forbidden for transport aboard passenger-carrying aircraft except as provided in § 172.102, Special Provision A101 of this subchapter. When transported aboard cargo-only aircraft, packages containing primary lithium batteries and cells transported in accordance with Special Provision A45 of the ICAO Technical Instructions must be marked “PRIMARY LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT” or “LITHIUM METAL BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT.” This marking is not required on packages that contain 5 kg (11 pounds) net weight or less of primary lithium batteries or cells that are contained in or packed with equipment.

(iii) *Prototype lithium batteries and cells.* Prototype lithium batteries and cells are forbidden for transport aboard passenger aircraft and must be approved by the Associate Administrator prior to transportation aboard cargo aircraft, in accordance with the requirements of Special Provision A55 in § 172.102 of this subchapter.

(2) A package containing Oxygen, compressed, or any of the following oxidizing gases must be packaged as required by Parts 173 and 178 of this subchapter: carbon dioxide and oxygen mixtures, compressed; compressed gas, oxidizing, n.o.s.; liquefied gas, oxidizing, n.o.s.; nitrogen trifluoride; and nitrous oxide.

[72 FR 25172, May 3, 2007, as amended at 72 FR 44847, Aug. 9, 2007; 72 FR 55097, Sept. 28, 2007]

§ 171.25 Additional requirements for the use of the IMDG Code.

(a) A hazardous material may be offered for transportation or transported to, from or within the United States by vessel, and by motor carrier and rail in accordance with the IMDG Code (IBR, see §171.7), as authorized in §171.22, provided all or part of the movement is by vessel. Such shipments must conform to the requirements in §171.22, as applicable, and this section.

(b) Any person who offers for transportation or transports a hazardous material in accordance with the IMDG Code must conform to the following additional conditions and requirements:

(1) Unless otherwise excepted, a shipment must conform to the requirements in part 176 of this subchapter. For transportation by rail or highway prior to or subsequent to transportation by vessel, a shipment must conform to the applicable requirements of parts 174 and 177 respectively, of this subchapter, and the motor vehicle or rail car must be placarded in accordance with subpart F of part 172 of this subchapter. When a hazardous material regulated by this subchapter for transportation by highway is transported by motor vehicle on a public highway or by rail under the provisions of subpart C of part 171, the segregation requirements of Part 7, Chapter 7.2 of the IMDG Code are authorized.

(2) For transportation by vessel, the stowage and segregation requirements in Part 7 of the IMDG Code may be substituted for the stowage and segregation requirements in part 176 of this subchapter.

(3) Packages containing primary lithium batteries and cells that are transported in accordance with Special Provision 188 of the IMDG Code must be

marked "PRIMARY LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT" or "LITHIUM METAL BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT." This marking is not required on packages that contain 5 kg (11 pounds) net weight or less of primary lithium batteries and cells that are contained in or packed with equipment.

(c) *Conditions and requirements for bulk packagings.* Except for IBCs and UN portable tanks used for the transportation of liquids or solids, bulk packagings must conform to the requirements of this subchapter. Additionally, the following requirements apply:

(1) UN portable tanks must conform to the requirements in Special Provisions TP37, TP38, TP44 and TP45 when applicable, and any applicable bulk special provisions assigned to the hazardous material in the Hazardous Materials Table in §172.101 of this subchapter;

(2) IMO Type 5 portable tanks must conform to DOT Specification 51 or UN portable tank requirements, unless specifically authorized in this subchapter or approved by the Associate Administrator;

(3) Except as specified in this subpart, for a material poisonous (toxic) by inhalation, the T Codes specified in Column 13 of the Dangerous Goods List in the IMDG Code may be applied to the transportation of those materials in IM, IMO and DOT Specification 51 portable tanks, when these portable tanks are authorized in accordance with the requirements of this subchapter; and

(4) No person may offer an IM or UN portable tank containing liquid hazardous materials of Class 3, PG I or II, or PG III with a flash point less than 100 °F (38 °C); Division 5.1, PG I or II; or Division 6.1, PG I or II, for unloading while it remains on a transport vehicle with the motive power unit attached, unless it conforms to the requirements in §177.834(o) of this subchapter.

(5) Effective February 13, 2009, portable tanks, cargo tanks, and tank cars containing cryogenic liquids must be stowed "on deck" regardless of the

stowage authorized in the IMDG Code. Cargo tanks or tank cars containing cryogenic liquids may be stowed one deck below the weather deck when transported on a trailership or trainship that is unable to provide “on deck” stowage because of the vessel’s design. Tank cars must be Class DOT-113 or AAR-204W tank cars. Portable tanks, cargo tanks, and tank cars containing cryogenic liquids that are in transportation and stowed below deck on or before February 13, 2009 may continue to be transported to their final destination.

(d) *Use of IMDG Code in port areas.* (1) Except for Division 1.1, 1.2, and Class 7 materials, a hazardous material being imported into or exported from the United States or passing through the United States in the course of being shipped between locations outside the United States may be offered and accepted for transportation and transported by motor vehicle within a single port area, including contiguous harbors, when packaged, marked, classed, labeled, stowed and segregated in accordance with the IMDG Code, offered and accepted in accordance with the requirements of subparts C and F of part 172 of this subchapter pertaining to shipping papers and placarding, and otherwise conforms to the applicable requirements of part 176 of this subchapter.

(2) The requirement in §172.201(d) of this subchapter for an emergency telephone number does not apply to shipments made in accordance with the IMDG Code if the hazardous material is not offloaded from the vessel, or is offloaded between ocean vessels at a U.S. port facility without being transported by public highway.

(3) Notwithstanding §171.25(d)(1), except for portable tanks, cargo tanks, and tank cars transporting cryogenic liquids before February 13, 2009. Effective February 13, 2009, portable tanks, cargo tanks, and tank cars containing cryogenic liquids, which are transported by a vessel passing through the United States in the course of being shipped between locations outside of the United States must be stowed “on deck” regardless of the stowage authorized in the IMDG Code. Cargo tanks or tank cars containing cryo-

genic liquids may be stowed one deck below the weather deck when transported on a trailership or trainship that is unable to provide “on deck” stowage because of the vessel’s design. Tank cars must be Class DOT-113 or AAR-204W tank cars. Portable tanks, cargo tanks, and tank cars containing cryogenic liquids that are in transportation and stowed below deck on or before February 13, 2009, may continue to be transported to their final destination.

[72 FR 25172, May 3, 2007, as amended at 72 FR 44847, Aug. 9, 2007; 73 FR 57004, Oct. 1, 2008; 74 FR 2233, Jan. 14, 2009]

§171.26 Additional requirements for the use of the IAEA Regulations.

A Class 7 (radioactive) material being imported into or exported from the United States or passing through the United States in the course of being shipped between places outside the United States may be offered for transportation or transported in accordance with the IAEA Regulations (IBR, see §171.7) as authorized in paragraph (a) of §171.22, provided the requirements in §171.22, as applicable, are met.

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, TRAINING REQUIREMENTS, AND SECURITY PLANS

Subpart A—General

Sec.

172.1 Purpose and scope.

172.3 Applicability.

Subpart B—Table of Hazardous Materials and Special Provisions

172.101 Purpose and use of hazardous materials table.

172.102 Special provisions.

Subpart C—Shipping Papers

172.200 Applicability.

172.201 Preparation and retention of shipping papers.

172.202 Description of hazardous material on shipping papers.

172.203 Additional description requirements.

172.204 Shipper’s certification.

ORIGINAL

stowage authorized in the IMDG Code. Cargo tanks or tank cars containing cryogenic liquids may be stowed one deck below the weather deck when transported on a trailership or trainship that is unable to provide "on deck" stowage because of the vessel's design. Tank cars must be Class DOT-113 or AAR-204W tank cars. Portable tanks, cargo tanks, and tank cars containing cryogenic liquids that are in transportation and stowed below deck on or before February 13, 2009 may continue to be transported to their final destination.

(d) *Use of IMDG Code in port areas.* (1) Except for Division 1.1, 1.2, and Class 7 materials, a hazardous material being imported into or exported from the United States or passing through the United States in the course of being shipped between locations outside the United States may be offered and accepted for transportation and transported by motor vehicle within a single port area, including contiguous harbors, when packaged, marked, classed, labeled, stowed and segregated in accordance with the IMDG Code, offered and accepted in accordance with the requirements of subparts C and F of part 172 of this subchapter pertaining to shipping papers and placarding, and otherwise conforms to the applicable requirements of part 176 of this subchapter.

(2) The requirement in §172.201(d) of this subchapter for an emergency telephone number does not apply to shipments made in accordance with the IMDG Code if the hazardous material is not offloaded from the vessel, or is offloaded between ocean vessels at a U.S. port facility without being transported by public highway.

(3) Notwithstanding §171.25(d)(1), except for portable tanks, cargo tanks, and tank cars transporting cryogenic liquids before February 13, 2009. Effective February 13, 2009, portable tanks, cargo tanks, and tank cars containing cryogenic liquids, which are transported by a vessel passing through the United States in the course of being shipped between locations outside of the United States must be stowed "on deck" regardless of the stowage authorized in the IMDG Code. Cargo tanks or tank cars containing cryo-

genic liquids may be stowed one deck below the weather deck when transported on a trailership or trainship that is unable to provide "on deck" stowage because of the vessel's design. Tank cars must be Class DOT-113 or AAR-204W tank cars. Portable tanks, cargo tanks, and tank cars containing cryogenic liquids that are in transportation and stowed below deck on or before February 13, 2009, may continue to be transported to their final destination.

[72 FR 25172, May 3, 2007, as amended at 72 FR 44847, Aug. 9, 2007; 73 FR 57004, Oct. 1, 2008; 74 FR 2233, Jan. 14, 2009]

§ 171.26 Additional requirements for the use of the IAEA Regulations.

A Class 7 (radioactive) material being imported into or exported from the United States or passing through the United States in the course of being shipped between places outside the United States may be offered for transportation or transported in accordance with the IAEA Regulations (IBR, see §171.7) as authorized in paragraph (a) of §171.22, provided the requirements in §171.22, as applicable, are met.

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, TRAINING REQUIREMENTS, AND SECURITY PLANS

Subpart A—General

- Sec.
- 172.1 Purpose and scope.
- 172.3 Applicability.

Subpart B—Table of Hazardous Materials and Special Provisions

- 172.101 Purpose and use of hazardous materials table.
- 172.102 Special provisions.

Subpart C—Shipping Papers

- 172.200 Applicability.
- 172.201 Preparation and retention of shipping papers.
- 172.202 Description of hazardous material on shipping papers.
- 172.203 Additional description requirements.
- 172.204 Shipper's certification.

172.205 Hazardous waste manifest.

Subpart D—Marking

172.300 Applicability.
 172.301 General marking requirements for non-bulk packagings.
 172.302 General marking requirements for bulk packagings.
 172.303 Prohibited marking.
 172.304 Marking requirements.
 172.306 [Reserved]
 172.308 Authorized abbreviations.
 172.310 Class 7 (radioactive) materials.
 172.312 Liquid hazardous materials in non-bulk packagings.
 172.313 Poisonous hazardous materials.
 172.315 Packages containing limited quantities.
 172.316 Packagings containing materials classed as ORM-D.
 172.317 KEEP AWAY FROM HEAT handling mark.
 172.320 Explosive hazardous materials.
 172.322 Marine pollutants.
 172.323 Infectious substances.
 172.324 Hazardous substances in non-bulk packagings.
 172.325 Elevated temperature materials.
 172.326 Portable tanks.
 172.328 Cargo tanks.
 172.330 Tank cars and multi-unit tank car tanks.
 172.331 Bulk packagings other than portable tanks, cargo tanks, tank cars and multi-unit tank car tanks.
 172.332 Identification number markings.
 172.334 Identification numbers; prohibited display.
 172.336 Identification numbers; special provisions.
 172.338 Replacement of identification numbers.

Subpart E—Labeling

172.400 General labeling requirements.
 172.400a Exceptions from labeling.
 172.401 Prohibited labeling.
 172.402 Additional labeling requirements.
 172.403 Class 7 (radioactive) material.
 172.404 Labels for mixed and consolidated packaging.
 172.405 Authorized label modifications.
 172.406 Placement of labels.
 172.407 Label specifications.
 172.411 EXPLOSIVE 1.1, 1.2, 1.3, 1.4, 1.5 and 1.6 labels, and EXPLOSIVE Subsidiary label.
 172.415 NON-FLAMMABLE GAS label.
 172.416 POISON GAS label.
 172.417 FLAMMABLE GAS label.
 172.419 FLAMMABLE LIQUID label.
 172.420 FLAMMABLE SOLID label.
 172.422 SPONTANEOUSLY COMBUSTIBLE label.
 172.423 DANGEROUS WHEN WET label.

172.426 OXIDIZER label.
 172.427 ORGANIC PEROXIDE label.
 172.429 POISON INHALATION HAZARD label.
 172.430 POISON label.
 172.431 [Reserved]
 172.432 INFECTIOUS SUBSTANCE label.
 172.436 RADIOACTIVE WHITE-I label.
 172.438 RADIOACTIVE YELLOW-II label.
 172.440 RADIOACTIVE YELLOW-III label.
 172.441 FISSION label.
 172.442 CORROSIVE label.
 172.444 [Reserved]
 172.446 CLASS 9 label.
 172.448 CARGO AIRCRAFT ONLY label.
 172.450 EMPTY label.

Subpart F—Placarding

172.500 Applicability of placarding requirements.
 172.502 Prohibited and permissive placarding.
 172.503 Identification number display on placards.
 172.504 General placarding requirements.
 172.505 Placarding for subsidiary hazards.
 172.506 Providing and affixing placards: Highway.
 172.507 Special placarding provisions: Highway.
 172.508 Placarding and affixing placarding: Rail.
 172.510 Special placarding provisions: Rail.
 172.512 Freight containers and aircraft unit load devices.
 172.514 Bulk packagings.
 172.516 Visibility and display of placards.
 172.519 General specifications for placards.
 172.521 DANGEROUS placard.
 172.522 EXPLOSIVES 1.1, EXPLOSIVES 1.2 and EXPLOSIVES 1.3 placards.
 172.523 EXPLOSIVES 1.4 placard.
 172.524 EXPLOSIVES 1.5 placard.
 172.525 EXPLOSIVES 1.6 placard.
 172.526 [Reserved]
 172.527 Background requirements for certain placards.
 172.528 NON-FLAMMABLE GAS placard.
 172.530 OXYGEN placard.
 172.532 FLAMMABLE GAS placard.
 172.536 [Reserved]
 172.540 POISON GAS placard.
 172.542 FLAMMABLE placard.
 172.544 COMBUSTIBLE placard.
 172.546 FLAMMABLE SOLID placard.
 172.547 SPONTANEOUSLY COMBUSTIBLE placard.
 172.548 DANGEROUS WHEN WET placard.
 172.550 OXIDIZER placard.
 172.552 ORGANIC PEROXIDE placard.
 172.553 [Reserved]
 172.554 POISON placard.
 172.555 POISON INHALATION HAZARD placard.
 172.556 RADIOACTIVE placard.
 172.558 CORROSIVE placard.

172.560 CLASS 9 placard.

Subpart G—Emergency Response Information

- 172.600 Applicability and general requirements.
 172.602 Emergency response information.
 172.604 Emergency response telephone number.
 172.606 Carrier information contact.

Subpart H—Training

- 172.700 Purpose and scope.
 172.701 Federal-State relationship.
 172.702 Applicability and responsibility for training and testing.
 172.704 Training requirements.

Subpart I—Safety and Security Plans

- 172.800 Purpose and applicability.
 172.802 Components of a security plan.
 172.804 Relationship to other Federal requirements.
 172.820 Additional planning requirements for transportation by rail.
 172.822 Limitation on actions by states, local governments, and Indian tribes.
 APPENDIX A TO PART 172—OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION COLOR TOLERANCE CHARTS AND TABLES
 APPENDIX B TO PART 172—TREFOIL SYMBOL
 APPENDIX C TO PART 172—DIMENSIONAL SPECIFICATIONS FOR RECOMMENDED PLACARD HOLDER
 APPENDIX D TO PART 172—RAIL RISK ANALYSIS FACTORS

AUTHORITY: 49 U.S.C. 5101-5128, 44701; 49 CFR 1.53.

SOURCE: Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, unless otherwise noted.

Subpart A—General

§ 172.1 Purpose and scope.

This part lists and classifies those materials which the Department has designated as hazardous materials for purposes of transportation and prescribes the requirements for shipping papers, package marking, labeling, and transport vehicle placarding applicable to the shipment and transportation of those hazardous materials.

[Amdt. 172-29, 41 FR 15997, Apr. 15, 1976, as amended by 66 FR 45379, Aug. 28, 2001]

§ 172.3 Applicability.

(a) This part applies to—

(1) Each person who offers a hazardous material for transportation, and

(2) Each carrier by air, highway, rail, or water who transports a hazardous material.

(b) When a person, other than one of those provided for in paragraph (a) of this section, performs a packaging labeling or marking function required by this part, that person shall perform the function in accordance with this part.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-32, 41 FR 38179, Sept. 9, 1976]

Subpart B—Table of Hazardous Materials and Special Provisions

§ 172.101 Purpose and use of hazardous materials table.

(a) The Hazardous Materials Table (Table) in this section designates the materials listed therein as hazardous materials for the purpose of transportation of those materials. For each listed material, the Table identifies the hazard class or specifies that the material is forbidden in transportation, and gives the proper shipping name or directs the user to the preferred proper shipping name. In addition, the Table specifies or references requirements in this subchapter pertaining to labeling, packaging, quantity limits aboard aircraft and stowage of hazardous materials aboard vessels.

(b) *Column 1: Symbols.* Column 1 of the Table contains six symbols (“+”, “A”, “D”, “G”, “I” and “W”) as follows:

(1) The plus (+) sign fixes the proper shipping name, hazard class and packing group for that entry without regard to whether the material meets the definition of that class, packing group or any other hazard class definition. When the plus sign is assigned to a proper shipping name in Column (1) of the § 172.101 Table, it means that the material is known to pose a risk to humans. When a plus sign is assigned to mixtures or solutions containing a material where the hazard to humans is significantly different from that of the pure material or where no hazard to humans is posed, the material may be described using an alternative shipping name that represents the hazards posed by the material. An appropriate alternate proper shipping name and hazard class may be authorized by the Associate Administrator.

(2) The letter “A” denotes a material that is subject to the requirements of this subchapter only when offered or intended for transportation by aircraft, unless the material is a hazardous substance or a hazardous waste. A shipping description entry preceded by an “A” may be used to describe a material for other modes of transportation provided all applicable requirements for the entry are met.

(3) The letter “D” identifies proper shipping names which are appropriate for describing materials for domestic transportation but may be inappropriate for international transportation under the provisions of international regulations (e.g., IMO, ICAO). An alternate proper shipping name may be selected when either domestic or international transportation is involved.

(4) The letter “C” identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description. (See §172.203(k).)

(5) The letter “I” identifies proper shipping names which are appropriate for describing materials in international transportation. An alternate proper shipping name may be selected when only domestic transportation is involved.

(6) The letter “W” denotes a material that is subject to the requirements of this subchapter only when offered or intended for transportation by vessel, unless the material is a hazardous substance or a hazardous waste. A shipping description entry preceded by a “W” may be used to describe a material for other modes of transportation provided all applicable requirements for the entry are met.

(c) *Column 2: Hazardous materials descriptions and proper shipping names.* Column 2 lists the hazardous materials descriptions and proper shipping names of materials designated as hazardous materials. Modification of a proper shipping name may otherwise be required or authorized by this section. Proper shipping names are limited to those shown in Roman type (not italics).

(1) Proper shipping names may be used in the singular or plural and in either capital or lower case letters.

Words may be alternatively spelled in the same manner as they appear in the ICAO Technical Instructions or the IMDG Code. For example “aluminum” may be spelled “aluminium” and “sulfur” may be spelled “sulphur”. However, the word “flammable” may not be used in place of the word “inflammable”.

(2) Punctuation marks and words in italics are not part of the proper shipping name, but may be used in addition to the proper shipping name. The word “or” in italics indicates that terms in the sequence may be used as the proper shipping name, as appropriate.

(3) The word “poison” or “poisonous” may be used interchangeably with the word “toxic” when only domestic transportation is involved. The abbreviation “n.o.i.” or “n.o.i.b.n.” may be used interchangeably with “n.o.s.”.

(4) Except for hazardous wastes, when qualifying words are used as part of the proper shipping name, their sequence in the package markings and shipping paper description is optional. However, the entry in the Table reflects the preferred sequence.

(5) When one entry references another entry by use of the word “see”, if both names are in Roman type, either name may be used as the proper shipping name (e.g., Ethyl alcohol, *see* Ethanol).

(6) When a proper shipping name includes a concentration range as part of the shipping description, the actual concentration, if it is within the range stated, may be used in place of the concentration range. For example, an aqueous solution of hydrogen peroxide containing 30 percent peroxide may be described as “Hydrogen peroxide, aqueous solution *with not less than 20 percent but not more than 40 percent hydrogen peroxide*” or “Hydrogen peroxide, aqueous solution *with 30 percent hydrogen peroxide*”.

(7) Use of the prefix “mono” is optional in any shipping name, when appropriate. Thus, Iodine monochloride may be used interchangeably with Iodine chloride. In “Glycerol alpha-monochlorohydrin” the term “mono” is considered a prefix to the term “chlorohydrin” and may be deleted.

(8) Use of the word “liquid” or “solid”. The word “liquid” or “solid”

may be added to a proper shipping name when a hazardous material specifically listed by name may, due to differing physical states, be a liquid or solid. When the packaging specified in Column 8 is inappropriate for the physical state of the material, the table provided in paragraph (i)(4) of this section should be used to determine the appropriate packaging section.

(9) *Hazardous wastes.* If the word "waste" is not included in the hazardous material description in Column 2 of the Table, the proper shipping name for a hazardous waste (as defined in §171.8 of this subchapter), shall include the word "Waste" preceding the proper shipping name of the material. For example: Waste acetone.

(10) *Mixtures and solutions.* (i) A mixture or solution not identified specifically by name, comprised of a hazardous material identified in the Table by technical name and non-hazardous material, shall be described using the proper shipping name of the hazardous material and the qualifying word "mixture" or "solution", as appropriate, unless—

(A) Except as provided in §172.101(i)(4) the packaging specified in Column 8 is inappropriate to the physical state of the material;

(B) The shipping description indicates that the proper shipping name applies only to the pure or technically pure hazardous material;

(C) The hazard class, packing group, or subsidiary hazard of the mixture or solution is different from that specified for the entry;

(D) There is a significant change in the measures to be taken in emergencies;

(E) The material is identified by special provision in Column 7 of the §172.101 Table as a material poisonous by inhalation; however, it no longer meets the definition of poisonous by inhalation or it falls within a different hazard zone than that specified in the special provision; or

(F) The material can be appropriately described by a shipping name that describes its intended application, such as "Coating solution", "Extracts, flavoring" or "Compound, cleaning liquid".

(ii) If one or more of the conditions specified in paragraph (c)(10)(i) of this section is satisfied, then a proper shipping name shall be selected as prescribed in paragraph (c)(12)(ii) of this section.

(iii) A mixture or solution not identified in the Table specifically by name, comprised of two or more hazardous materials in the same hazard class, shall be described using an appropriate shipping description (e.g., "Flammable liquid, n.o.s."). The name that most appropriately describes the material shall be used; e.g., an alcohol not listed by its technical name in the Table shall be described as "Alcohol, n.o.s." rather than "Flammable liquid, n.o.s.". Some mixtures may be more appropriately described according to their application, such as "Coating solution" or "Extracts, flavoring liquid" rather than by an n.o.s. entry. Under the provisions of subparts C and D of this part, the technical names of at least two components most predominately contributing to the hazards of the mixture or solution may be required in association with the proper shipping name.

(11) Except for a material subject to or prohibited by §173.21, 173.54, 173.56(d), 173.56(e), 173.224(c) or 173.225(b) of this subchapter, a material that is considered to be a hazardous waste or a sample of a material for which the hazard class is uncertain and must be determined by testing may be assigned a tentative proper shipping name, hazard class, identification number and packing group, if applicable, based on the shipper's tentative determination according to:

(i) Defining criteria in this subchapter;

(ii) The hazard precedence prescribed in §173.2a of this subchapter;

(iii) The shipper's knowledge of the material;

(iv) In addition to paragraphs (c)(11)(i) through (iii) of this section, for a sample of a material other than a waste, the following must be met:

(A) Except when the word "Sample" already appears in the proper shipping name, the word "Sample" must appear as part of the proper shipping name or in association with the basic description on the shipping paper.

(B) When the proper shipping description for a sample is assigned a “G” in Column (1) of the §172.101 Table, and the primary constituent(s) for which the tentative classification is based are not known, the provisions requiring a technical name for the constituent(s) do not apply; and

(C) A sample must be transported in a combination packaging that conforms to the requirements of this subchapter that are applicable to the tentative packing group assigned, and may not exceed a net mass of 2.5 kg (5.5 pounds) per package.

NOTE TO PARAGRAPH (c)(11): For the transportation of samples of self-reactive materials, organic peroxides, explosives or lighters, see §§ 173.224(c)(3), 173.225(c)(2), 173.56(d) or 173.308(b)(2) of this subchapter, respectively.

(12) Except when the proper shipping name in the Table is preceded by a plus (+)—

(i) If it is specifically determined that a material meets the definition of a hazard class, packing group or hazard zone, other than the class, packing group or hazard zone shown in association with the proper shipping name, or does not meet the defining criteria for a subsidiary hazard shown in Column 6 of the Table, the material shall be described by an appropriate proper shipping name listed in association with the correct hazard class, packing group, hazard zone, or subsidiary hazard for the material.

(ii) *Generic or n.o.s. descriptions.* If an appropriate technical name is not shown in the Table, selection of a proper shipping name shall be made from the generic or n.o.s. descriptions corresponding to the specific hazard class, packing group, hazard zone, or subsidiary hazard, if any, for the material. The name that most appropriately describes the material shall be used; e.g., an alcohol not listed by its technical name in the Table shall be described as “Alcohol, n.o.s.” rather than “Flammable liquid, n.o.s.”. Some mixtures may be more appropriately described according to their application, such as “Coating solution” or “Extracts, flavoring, liquid”, rather than by an n.o.s. entry, such as “Flammable liquid, n.o.s.” It should be noted, however, that an n.o.s. description as a proper

shipping name may not provide sufficient information for shipping papers and package markings. Under the provisions of subparts C and D of this part, the technical name of one or more constituents which makes the product a hazardous material may be required in association with the proper shipping name.

(iii) *Multiple hazard materials.* If a material meets the definition of more than one hazard class, and is not identified in the Table specifically by name (e.g., acetyl chloride), the hazard class of the material shall be determined by using the precedence specified in §173.2a of this subchapter, and an appropriate shipping description (e.g., “Flammable liquid, corrosive n.o.s.”) shall be selected as described in paragraph (c)(12)(ii) of this section.

(iv) If it is specifically determined that a material is not a forbidden material and does not meet the definition of any hazard class, the material is not a hazardous material.

(13) *Self-reactive materials and organic peroxides.* A generic proper shipping name for a self-reactive material or an organic peroxide, as listed in Column 2 of the Table, must be selected based on the material’s technical name and concentration, in accordance with the provisions of §§173.224 or 173.225 of this subchapter, respectively.

(14) A proper shipping name that describes all isomers of a material may be used to identify any isomer of that material if the isomer meets criteria for the same hazard class or division, subsidiary risk(s) and packing group, unless the isomer is specifically identified in the Table.

(15) Unless a hydrate is specifically listed in the Table, a proper shipping name for the equivalent anhydrous substance may be used, if the hydrate meets the same hazard class or division, subsidiary risk(s) and packing group.

(16) Unless it is already included in the proper shipping name in the §172.101 Table, the qualifying words “liquid” or “solid” may be added in association with the proper shipping name when a hazardous material specifically listed by name in the §172.101 Table may, due to the differing physical states of the various isomers of the

material, be either a liquid or a solid (for example "Dinitrotoluenes, liquid" and "Dinitrotoluenes, solid"). Use of the words "liquid" or "solid" is subject to the limitations specified for the use of the words "mixture" or "solution" in paragraph (c)(10) of this section. The qualifying word "molten" may be added in association with the proper shipping name when a hazardous material, which is a solid in accordance with the definition in §171.8 of this subchapter, is offered for transportation in the molten state (for example, "Alkylphenols, solid, n.o.s., molten").

(d) *Column 3: Hazard class or Division.* Column 3 contains a designation of the hazard class or division corresponding to each proper shipping name, or the word "Forbidden".

(1) A material for which the entry in this column is "Forbidden" may not be offered for transportation or transported. This prohibition does not apply if the material is diluted, stabilized or incorporated in a device and it is classed in accordance with the definitions of hazardous materials contained in part 173 of this subchapter.

(2) When a reevaluation of test data or new data indicates a need to modify the "Forbidden" designation or the hazard class or packing group specified for a material specifically identified in the Table, this data should be submitted to the Associate Administrator.

(3) A basic description of each hazard class and the section reference for class definitions appear in §173.2 of this subchapter.

(4) Each reference to a Class 3 material is modified to read "Combustible liquid" when that material is reclassified in accordance with §173.150(e) or (f) of this subchapter or has a flash point above 60 °C (140 °F) but below 93 °C (200 °F).

(e) *Column 4: Identification number.* Column 4 lists the identification number assigned to each proper shipping name. Those preceded by the letters "UN" are associated with proper shipping names considered appropriate for international transportation as well as domestic transportation. Those preceded by the letters "NA" are associated with proper shipping names not recognized for international transportation, except to and from Canada.

Identification numbers in the "NA9000" series are associated with proper shipping names not appropriately covered by international hazardous materials (dangerous goods) transportation standards, or not appropriately addressed by international transportation standards for emergency response information purposes, except for transportation between the United States and Canada.

(f) *Column 5: Packing group.* Column 5 specifies one or more packing groups assigned to a material corresponding to the proper shipping name and hazard class for that material. Class 2, Class 7, Division 6.2 (other than regulated medical wastes), and ORM-D materials, do not have packing groups. Packing Groups I, II and III indicate the degree of danger presented by the material is either great, medium or minor, respectively. If more than one packing group is indicated for an entry, the packing group for the hazardous material is determined using the criteria for assignment of packing groups specified in subpart D of part 173. When a reevaluation of test data or new data indicates a need to modify the specified packing group(s), the data should be submitted to the Associate Administrator. Each reference in this column to a material which is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter "A" or "W", is modified to read "III" on those occasions when the material is offered for transportation or transported by a mode in which its transportation is not otherwise subject to requirements of this subchapter.

(g) *Column 6: Labels.* Column 6 specifies codes which represent the hazard warning labels required for a package filled with a material conforming to the associated hazard class and proper shipping name, unless the package is otherwise excepted from labeling by a provision in subpart E of this part, or part 173 of this subchapter. The first code is indicative of the primary hazard of the material. Additional label codes are indicative of subsidiary hazards. Provisions in §172.402 may require that a label other than that specified in Column 6 be affixed to the package in addition to that specified in Column

6. No label is required for a material classed as a combustible liquid or for a Class 3 material that is reclassified as a combustible liquid. For “Empty” label requirements, see §173.428 of this subchapter. The codes contained in Column 6 are defined according to the following table:

LABEL SUBSTITUTION TABLE

Label code	Label name
1	Explosive
1.1 ¹	Explosive 1.1 ¹
1.2 ¹	Explosive 1.2 ¹
1.3 ¹	Explosive 1.3 ¹
1.4 ¹	Explosive 1.4 ¹
1.5 ¹	Explosive 1.5 ¹
1.6 ¹	Explosive 1.6 ¹
2.1	Flammable Gas
2.2	Non-Flammable Gas
2.3	Poison Gas
3	Flammable Liquid
4.1	Flammable Solid
4.2	Spontaneously Combustible
4.3	Dangerous When Wet
5.1	Oxidizer
5.2	Organic Peroxide
6.1 (inhalation hazard, Zone A or B).	Poison Inhalation Hazard
6.1 (other than inhalation hazard, Zone A or B) ² .	Poison
6.2	Infectious substance
7	Radioactive
8	Corrosive
9	Class 9

¹ Refers to the appropriate compatibility group letter.
² The packing group for a material is indicated in column 5 of the table.

(h) *Column 7: Special provisions.* Column 7 specifies codes for special provisions applicable to hazardous materials. When Column 7 refers to a special provision for a hazardous material, the meaning and requirements of that special provision are as set forth in §172.102 of this subpart.

(i) *Column 8: Packaging authorizations.* Columns 8A, 8B and 8C specify the applicable sections for exceptions, non-bulk packaging requirements and bulk packaging requirements, respectively, in part 173 of this subchapter. Columns 8A, 8B and 8C are completed in a manner which indicates that “§173.” precedes the designated numerical entry. For example, the entry “202” in Column 8B associated with the proper shipping name “Gasoline” indicates that for this material conformance to non-bulk packaging requirements prescribed in §173.202 of this subchapter is required. When packaging requirements are specified, they are in addition to the standard requirements for

all packagings prescribed in §173.24 of this subchapter and any other applicable requirements in subparts A and B of part 173 of this subchapter.

(1) *Exceptions.* Column 8A contains exceptions from some of the requirements of this subchapter. The referenced exceptions are in addition to those specified in subpart A of part 173 and elsewhere in this subchapter. A “None” in this column means no packaging exceptions are authorized, except as may be provided by special provisions in Column 7.

(2) *Non-bulk packaging.* Column 8B references the section in part 173 of this subchapter which prescribes packaging requirements for non-bulk packagings. A “None” in this column means non-bulk packagings are not authorized, except as may be provided by special provisions in Column 7. Each reference in this column to a material which is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter “A” or “W”, is modified to include “§173.203” or “§173.213”, as appropriate for liquids and solids, respectively, on those occasions when the material is offered for transportation or transported by a mode in which its transportation is not otherwise subject to the requirements of this subchapter.

(3) *Bulk packaging.* Column (8C) specifies the section in part 173 of this subchapter that prescribes packaging requirements for bulk packagings, subject to the limitations, requirements, and additional authorizations of Columns (7) and (8B). A “None” in Column (8C) means bulk packagings are not authorized, except as may be provided by special provisions in Column (7) and in packaging authorizations Column (8B). Additional authorizations and limitations for use of UN portable tanks are set forth in Column 7. For each reference in this column to a material that is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter “A” or “W” and that is offered for transportation or transported by a mode in which its transportation is not otherwise subject to the requirements of this subchapter:

(4) For a hazardous material which is specifically named in the Table and whose packaging sections specify packagings not applicable to the form of the material (e.g., packaging specified is for solid material and the material is being offered for transportation in a liquid form) the following table should be used to determine the appropriate packaging section:

Packaging section reference for solid materials	Corresponding packaging section for liquid materials
§ 173.187	§ 173.181
§ 173.211	§ 173.201
§ 173.212	§ 173.202
§ 173.213	§ 173.203
§ 173.240	§ 173.241
§ 173.242	§ 173.243

(5) *Cylinders.* For cylinders, both non-bulk and bulk packaging authorizations are set forth in Column (8B). Notwithstanding a designation of "None" in Column (8C), a bulk cylinder may be used when specified through the section reference in Column (8B).

(j) *Column 9: Quantity limitations.* Columns 9A and 9B specify the maximum quantities that may be offered for transportation in one package by passenger-carrying aircraft or passenger-carrying rail car (Column 9A) or by cargo aircraft only (Column 9B), subject to the following:

(1) "Forbidden" means the material may not be offered for transportation or transported in the applicable mode of transport.

(2) The quantity limitation is "net" except where otherwise specified, such as for "Consumer commodity" which specifies "30 kg gross."

(3) When articles or devices are specifically listed by name, the net quantity limitation applies to the entire article or device (less packaging and packaging materials) rather than only to its hazardous components.

(4) A package offered or intended for transportation by aircraft and which is filled with a material forbidden on passenger-carrying aircraft but permitted on cargo aircraft only, or which exceeds the maximum net quantity authorized on passenger-carrying aircraft, shall be labelled with the CARGO AIRCRAFT ONLY label specified in § 172.448 of this part.

(5) The total net quantity of hazardous material for an outer non-bulk packaging that contains more than one hazardous material may not exceed the lowest permitted maximum net quantity per package as shown in Column 9A or 9B, as appropriate. If one material is a liquid and one is a solid, the maximum net quantity must be calculated in kilograms. See § 173.24a(c)(1)(iv).

(k) *Column 10: Vessel stowage requirements.* Column 10A [Vessel stowage] specifies the authorized stowage locations on board cargo and passenger vessels. Column 10B [Other provisions] specifies codes for stowage requirements for specific hazardous materials. The meaning of each code in Column 10B is set forth in § 176.84 of this subchapter. Section 176.63 of this subchapter sets forth the physical requirements for each of the authorized locations listed in Column 10A. (For bulk transportation by vessel, see 46 CFR parts 30 to 40, 70, 98, 148, 151, 153 and 154.) The authorized stowage locations specified in Column 10A are defined as follows:

(1) Stowage category "A" means the material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

(2) Stowage category "B" means—
 (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and

(ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

(3) Stowage category "C" means the material must be stowed "on deck only" on a cargo vessel and on a passenger vessel.

(4) Stowage category "D" means the material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

(5) Stowage category “E” means the material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

(6) Stowage category “01” means the material may be stowed “on deck” or “under deck” on a cargo vessel (up to 12 passengers) and on a passenger vessel.

(7) Stowage category “02” means the material may be stowed “on deck” or “under deck” on a cargo vessel (up to 12 passengers) and “on deck” in closed cargo transport units or “under deck” in closed cargo transport units on a passenger vessel.

(8) Stowage category “03” means the material may be stowed “on deck” or “under deck” on a cargo vessel (up to 12 passengers) and “on deck” in closed cargo transport units on a passenger vessel.

(9) Stowage category “04” means the material may be stowed “on deck” or “under deck” on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(10) Stowage category “05” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) and on a passenger vessel.

(11) Stowage category “06” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) and “on deck” in closed cargo transport units or “under deck” in closed cargo transport units on a passenger vessel.

(12) Stowage category “07” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) and “on deck” only in closed cargo transport units on a passenger vessel.

(13) Stowage category “08” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(14) Stowage category “09” means the material may be stowed “on deck only” in closed cargo transport units or “under deck” in closed cargo transport units on a cargo vessel (up to 12 passengers) and on a passenger vessel.

(15) Stowage category “10” means the material may be stowed “on deck” in closed cargo transport units or “under deck” in closed cargo transport units on a cargo vessel (up to 12 passengers) and “on deck” only in closed cargo transport units on a passenger vessel.

(16) Stowage category “11” means the material may be stowed “on deck” in closed cargo transport units or “under deck” in magazine stowage type “c” on a cargo vessel (up to 12 passengers) and “on deck” only in closed cargo transport units on a passenger vessel.

(17) Stowage category “12” means the material may be stowed “on deck” in closed cargo transport units or “under deck” in magazine stowage type “c” on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(18) Stowage category “13” means the material may be stowed “on deck” in closed cargo transport units or “under deck” in magazine stowage type “A” on a cargo vessel (up to 12 passengers) and “on deck” only in closed cargo transport units on a passenger vessel.

(19) Stowage category “14” means the material may be stowed “on deck” in closed cargo transport units on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(20) Stowage category “15” means the material may be stowed “on deck” in closed cargo transport units or “under deck” in closed cargo transport units on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(1) *Changes to the Table.* (1) Unless specifically stated otherwise in a rule document published in the FEDERAL REGISTER amending the Table—

(i) Such a change does not apply to the shipment of any package filled prior to the effective date of the amendment; and

(ii) Stocks of preprinted shipping papers and package markings may be continued in use, in the manner previously authorized, until depleted or

for a one-year period, subsequent to the effective date of the amendment, whichever is less.

(2) Except as otherwise provided in this section, any alteration of a shipping description or associated entry which is listed in the §172.101 Table must receive prior written approval from the Associate Administrator.

(3) The proper shipping name of a hazardous material changed in the May 6, 1997 final rule, in effect on October 1, 1997, only by the addition or omission of the word "compressed," "inhibited," "liquefied" or "solution" may continue to be used to comply with package marking requirements, until January 1, 2003.

§ 172.101 HAZARDOUS MATERIALS TABLE

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
	Accelerene, see p-Nitrosodimethylaniline. Accumulators, electric, see Batteries, wet etc. Accumulators, pressurized, pneu-matic or hydraulic (containing non-flammable gas), see Articles pres-surized, pneumatic or hydraulic (containing non-flammable gas).												
	Acetal	3	UN1088	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Acetaldehyde	3	UN1089	I	3	A3, B16, T11, TP2, TP7	None	201	243	Forbidden	30 L	E	
	Acetaldehyde ammonia	9	UN1841	III	9	IB6, IP3, IP7, T1, TP33	155	204	240	200 kg	200 kg	A	34
	Acetaldehyde oxime	3	UN2332	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	
	Acetic acid, glacial or Acetic acid so-lution, with more than 80 percent acid, by mass.	8	UN2789	II	8, 3	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	
	Acetic acid solution, not less than 50 percent but not more than 80 per-cent acid, by mass.	8	UN2790	II	8	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	
	Acetic acid solution, with more than 10 percent and less than 50 per-cent acid, by mass.	8	UN2790	III	8	IB3, T4, TP1	154	203	242	5 L	60 L	A	
	Acetic anhydride	8	UN1715	II	8, 3	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	40
	Acetone	3	UN1090	II	3	2, B9, B14, B32, B76, TP13, TP38, TP45	150	202	242	5 L	60 L	B	25, 40, 52, 53
	Acetone cyanohydrin, stabilized	6.1	UN1541	I	6.1	B77, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	
	Acetone oils	3	UN1091	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Acetonitrile	3	UN1648	II	3	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
	Acetyl acetone peroxide with more than 9 percent by mass active oxy-gen.	Forbidden				IB2, T7, TP2							
	Acetyl benzoyl peroxide, solid, or with more than 40 percent in solu-tion.	Forbidden											
	Acetyl bromide	8	UN1716	II	8	B2, IB2, T8, TP2	154	202	242	1 L	30 L	C	40

UN1717	3	UN1717	II	3, 8	A3, A6, A7, IB1, N34, T8, TP2	150	202	243	1 L	5 L	B	40
Acetyl chloride	Forbidden	UN1717	II	3, 8	A3, A6, A7, IB1, N34, T8, TP2	150	202	243	1 L	5 L	B	40
Acetyl cyclohexanesulfonyl peroxide, with more than 82 percent wetted with less than 12 percent water.	8	UN1898	III	8	B2, IB2, T7, TP2, TP13	154	202	242	1 L	30 L	C	40
Acetyl iodide	3	UN2621	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
Acetyl methyl carbinol	Forbidden											
Acetyl peroxide, solid, or with more than 25 percent in solution.	2.1	UN1001		2.1	N86, N88	None	303	None	Forbidden	15 kg	D	25, 40, 57
Acetylene, dissolved	Forbidden											
Acetylene (liquefied)	Forbidden											
Acetylene silver nitrate	Forbidden											
Acetylene, solvent free	Forbidden											
Acetylene tetrabromide, see Tetra bromoethane.												
Acid butyl phosphite, see Butyl acid phosphate.												
Acid, sludge, see Sludge acid												
Acridine	6.1	UN2713	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Acrolein dimer, stabilized	3	UN2607	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
Acrolein, stabilized	6.1	UN1092	I	6.1, 3	1, B9, B14, B30, B42, B77, T22, TP2, TP7, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
Acrylamide, solid	6.1	UN2074	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	12
Acrylamide solution	6.1	UN3426	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12
Acrylic acid, stabilized	8	UN2218	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	C	25, 40
Acrylonitrile, stabilized	3	UN1093	I	3, 6.1	B9, T14, TP2, TP13	None	201	243	Forbidden	30 L	E	40
Actuating cartridge, explosive, see Cartridges, power device.												
Adhesives, containing a flammable liquid.	3	UN1133	I	3	T11, TP1, TP8, TP27	150	201	243	1 L	30 L	B	
Adiponitrile												
Aerosols, corrosive, Packing Group II or III, (each not exceeding 1 L capacity).	2.1	UN1950		2.1	N82	306	304	None	75 kg	150 kg	A	48, 87, 126
Aerosols, flammable, (each not exceeding 1 L capacity).	2.1	UN1950		2.1	N82	306	304	None	Forbidden	150 kg	A	48, 87, 126
Aerosols, flammable, n.o.s. (engine starting fluid) (each not exceeding 1 L capacity).	2.2	UN1950		2.2		306	None	None	75 kg	150 kg	A	48, 87, 126
Aerosols, non-flammable, (each not exceeding 1 L capacity).	2.2	UN1950		2.2		306	None	None	75 kg	150 kg	A	48, 87, 126
Aerosols, poison, (each not exceeding 1 L capacity).	2.2	UN1950		2.2, 6.1		306	None	None	Forbidden	Forbidden	A	48, 87, 126
Air bag inflators, or Air bag modules, or Seat-belt pretensioners.	1.4G	UN0503	II	1.4G	161	None	62	None	Forbidden	75 kg	O2	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
G	Air bag inflators, or Air bag modules, or Seat-belt pretensioners..	9	UN3268	III	9	160	166	166	25 kg	100 kg	A		
	Air, compressed	2.2	UN1002		2.2	78	306, 307.	302	75 kg	150 kg	A		
	Air, refrigerated liquid, (cryogenic liq-uid)	2.2	UN1003		2.2, 5.1	T75, TP5, TP22	316	318, 319.	Forbidden	Forbidden	D	51	
	Air, refrigerated liquid, (cryogenic liq-uid) non-pressurized.	2.2	UN1003		2.2, 5.1	T75, TP5, TP22	316	318, 319.	Forbidden	Forbidden	D	51	
Aircraft engines (including turbines), see Engines, internal combustion.													
Aircraft evacuation slides, see Life saving appliances etc.													
Aircraft hydraulic power unit fuel tank (containing a mixture of anhydrous hydrazine and monomethyl hydra-zine) (M86 fuel).													
Aircraft survival kits, see Life saving appliances etc.													
Alcoholates solution, n.o.s., in alco-hol.		3	UN3165	I	3, 6.1, 8.	None	172	None	Forbidden	42 L	E		
G	Alcoholic beverages	3	UN3274	II	3, 8	150	202	243	1 L	5 L	B		
			UN3065	II	3	24, 149, B1, IB2, T4, TP1	202	242	5 L	60 L	A		
			UN1987	III	3	24, B1, IB3, N11, T2, TP1	203	242	60 L	220 L	A		
				I	3	172, T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E	
				II	3	172, IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	172, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
				I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40
				II	3, 6.1	IB2, T11, TP2, TP27	150	202	243	1 L	60 L	B	40
				III	3, 6.1	B1, IB3, T7, TP1, TP28	150	203	242	60 L	220 L	A	
				I	3	T11, TP1, TP27	None	201	243	1 L	30 L	E	
G	Aldehydes, n.o.s.	3	UN1989	III	3	IB2, T7, TP1, TP8, TP28	202	242	5 L	60 L	A		
			UN1988	III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	B	
				I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40
			II	3, 6.1	IB2, T11, TP2, TP27	150	202	243	1 L	60 L	B	40	

G	Aldol	6.1	UN2839	III	3, 6.1	B1, IB3, T7, TP1, TP28	150	203	242	60 L	220 L	A	12
	Alkali metal alcoholates, self-heating, corrosive, n.o.s.	4.2	UN3206	II	4.2, 8	IB2, T7, TP2 64, A7, IB5, IP2, T3, TP33	153	202	243	5 L	60 L	A	12
	Alkali metal alloys, liquid, n.o.s.	4.3	UN1421	III	4.2, 8	64, A7, IB8, IP3, T1, TP33	None	212	242	15 kg	50 kg	B	52
	Alkali metal amalgam, liquid	4.3	UN1389	I	4.3	A2, A3, A7, B48, N34	None	201	244	Forbidden	1 L	D	52
	Alkali metal amalgam, solid	4.3	UN3401	I	4.3	A2, A3, A7, N34	None	201	244	Forbidden	1 L	D	40, 52
	Alkali metal amides	4.3	UN1390	II	4.3	IB4, IP1, N40, T9, TP7, TP33	None	211	242	Forbidden	15 kg	D	52
	Alkali metal dispersions, or Alkaline earth metal dispersions.	4.3	UN1391	I	4.3	A6, A7, A8, A19, A20, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	40, 52
	Alkaline corrosive liquids, n.o.s., see Caustic alkali liquids, n.o.s.	4.2	UN3205	II	4.2	A2, A3, A7	None	201	244	Forbidden	1 L	D	52
	Alkaline earth metal alcoholates, n.o.s.	4.3	UN1393	III	4.2	65, A7, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	B	52
	Alkaline earth metal alloys, n.o.s.	4.3	UN1393	III	4.2	65, A7, IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	B	52
G	Alkaline earth metal amalgams, liquid	4.3	UN1389	II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	52
	Alkaline earth metal amalgams, solid	4.3	UN1392	I	4.3	A19, N34, N40	None	201	244	Forbidden	1 L	E	40, 52
	Alkaloids, liquid, n.o.s., or Alkaloid salts, liquid, n.o.s.	6.1	UN3140	I	6.1	A19, N34, N40, T9, TP7, TP33	None	211	242	Forbidden	15 kg	D	52
	Alkaloids, solid, n.o.s. or Alkaloid salts, solid, n.o.s. poisonous.	6.1	UN1544	III	6.1	A4, T14, TP2, TP27	None	201	243	1 L	30 L	A	52
	Alkyl sulfonic acids, liquid or Aryl sulfonic acids, liquid with more than 5 percent free sulfuric acid.	8	UN2584	II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	A	52
	Alkyl sulfonic acids, liquid or Aryl sulfonic acids, liquid with not more than 5 percent free sulfuric acid.	8	UN2586	III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	52
	Alkyl sulfonic acids, solid or Aryl sulfonic acids, solid with more than 5 percent free sulfuric acid.	8	UN2583	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	52
	Alkyl sulfonic acids, solid or Aryl sulfonic acids, solid with not more than 5 percent free sulfuric acid.	8	UN2585	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues).	8	UN3145	III	8	B2, IB2, T8, TP2, TP13	154	202	242	100 kg	200 kg	A	52
	Alkylphenols, solid, n.o.s. (including C2-C12 homologues).	8	UN2430	I	8	IB3, T4, TP1	154	203	241	1 L	60 L	B	52
G	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues).	8	UN2583	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
	Alkylphenols, solid, n.o.s. (including C2-C12 homologues).	8	UN2585	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues).	8	UN3145	I	8	A6, T14, TP2	None	201	243	0.5 L	2.5 L	B	52
	Alkylphenols, solid, n.o.s. (including C2-C12 homologues).	8	UN2430	II	8	IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	52
	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues).	8	UN2430	III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	52
	Alkylphenols, solid, n.o.s. (including C2-C12 homologues).	8	UN2430	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues).	8	UN2430	II	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
	Alkylphenols, solid, n.o.s. (including C2-C12 homologues).	8	UN2430	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues).	8	UN2430	II	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
	Alkylphenols, solid, n.o.s. (including C2-C12 homologues).	8	UN2430	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
	Alkylsulfuric acids	8	UN2571	II	8	IB8, IP2, IP4, T3, TP33 IB8, IP3, T1, TP33	154	212	240	15 kg	50 kg	B	
	Alifethrin, see Pesticides, liquid, toxic, n.o.s.												
	Allyl acetate	3	UN2333	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Allyl alcohol	6.1	UN1098	I	6.1, 3	2, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Allyl bromide	3	UN1099	I	3, 6.1	T14, TP2, TP13	None	201	243	Forbidden	30 L	B	40
	Allyl chloride	3	UN1100	I	3, 6.1	T14, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Allyl chlorocarbonate, see Allyl chloroformate												
	Allyl chloroformate	6.1	UN1722	I	6.1, 3, 8	2, B9, B14, B32, N41, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Allyl ethyl ether	3	UN2335	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Allyl formate	3	UN2336	I	3, 6.1	T14, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Allyl glycidyl ether	3	UN2219	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Allyl iodide	3	UN1723	II	3, 8	A3, A6, IB1, N34, T7, TP2, TP13	150	202	243	1 L	5 L	B	40
	Allyl isothiocyanate, stabilized	6.1	UN1545	II	6.1, 3	A3, A7, IB2, T7, TP2	None	202	243	Forbidden	60 L	D	40
	Allylamine	6.1	UN2334	I	6.1, 3	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Allyltrichlorosilane, stabilized	8	UN1724	II	8, 3	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	243	Forbidden	30 L	C	40
	Aluminum borohydride or Aluminum borohydride in devices	4.2	UN2870	I	4.2, 4.3	B11, T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	
	Aluminum bromide, anhydrous	8	UN1725	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	40
	Aluminum bromide, solution	8	UN2580	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Aluminum carbide	4.3	UN1394	II	4.3	A20, IB7, IP2, N41, T3, TP33	151	212	242	15 kg	50 kg	A	52
	Aluminum chloride, anhydrous	8	UN1726	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	40
	Aluminum chloride, solution	8	UN2581	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Aluminum dross, wet or hot	Forbidden											

Aluminum ferrosilicon powder	4.3	UN1395	II	4.3, 6.1	A19, IB5, IP2, T3, TP33	151	212	242	15 kg	50 kg	A	39, 40, 52, 53, 85, 103
Aluminum hydride	4.3	UN2463	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
Aluminum, molten	9	NA9260	III	9	IB3, T1, TP3	None	None	247	Forbidden	Forbidden	D	40, 85
Aluminum nitrate	5.1	UN1438	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13, 39, 52, 53, 74, 101
Aluminum phosphate solution, see Corrosive liquids, etc.												13, 39, 52, 53, 74, 101
Aluminum phosphide	4.3	UN1397	I	4.3, 6.1	A8, A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
Aluminum phosphide pesticides	6.1	UN3048	I	6.1	A8, IB7, IP1, T6, TP33	None	211	242	Forbidden	15 kg	E	40, 85
Aluminum powder, coated	4.1	UN1309	II	4.1	IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	A	13, 39, 52, 53, 74, 101
Aluminum powder, uncoated	4.3	UN1396	II	4.3	IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	13, 39, 52, 53, 74, 101
Aluminum resinates	4.1	UN2715	III	4.1	A19, A20, IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	A	39, 52, 53
Aluminum silicon powder, uncoated	4.3	UN1398	III	4.3	A19, A20, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	39, 52, 53
Aluminum smelting by-products or Aluminum remelting by-products	4.3	UN3170	II	4.3	IB6, T1, TP33	151	213	240	25 kg	100 kg	A	39, 40, 52, 53, 85, 103
Amatols, see Explosives, blasting, type B.												85, 103
Amine, flammable, corrosive, n.o.s. or Polyamines, flammable, corrosive, n.o.s.	3	UN2733	I	3, 8	128, B115, IB7, IP2, T3, TP33	None	212	242	15 kg	50 kg	B	85, 103
Amine, liquid, corrosive, flammable, n.o.s. or Polyamines, liquid, corrosive, flammable, n.o.s.	8	UN2734	I	8, 9	128, B115, IB8, IP4, T1, TP33	None	213	241	25 kg	100 kg	B	85, 103
Amines, liquid, corrosive, n.o.s., or Polyamines, liquid, corrosive, n.o.s.	8	UN2735	I	8	T14, TP1, TP27	None	201	243	0.5 L	2.5 L	D	40, 52
Amines, solid, corrosive, n.o.s., or Polyamines, solid, corrosive n.o.s.	8	UN3259	I	8	IB2, T11, TP2, TP27	None	202	243	1 L	5 L	B	40, 52
					A3, A6, B10, N34, T14, TP2, TP27	None	201	243	5 L	60 L	A	40, 52
					B2, IB2, T11, TP1, TP27	154	202	241	0.5 L	2.5 L	A	52
					IB3, T7, TP1, TP28	154	203	241	1 L	30 L	A	52
					IB7, IP1, T6, TP33	None	211	242	5 L	60 L	A	52
						None	211	242	1 kg	25 kg	A	52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/trail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	.....						(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	2-Amino-4-chlorophenol	6.1	UN2673	III	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
	2-Amino-5-diethylaminopentane	6.1	UN2946	III	6.1	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
	2-Amino-4,6-Dinitrophenol, wetted	6.1	UN3317	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	with not less than 20 percent water	4.1		I	4.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	by mass.					23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36
	2-(2-Aminoethoxy) ethanol	8	UN3055	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	N-Aminoethylpiperazine	8	UN2815	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	12
	Aminophenols (o-, m-, p-)	6.1	UN2512	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	Aminopropyl/diethanolamine, see Amines, etc.												
	n-Aminopropylmorpholine, see Amines, etc.												
I	Aminopyridines (o-, m-, p-)	6.1	UN2671	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	12, 40, 52
D	Ammonia, anhydrous	2.3	UN1005	.....	2.3, 8	4, N87, T50	None	304	314, 315	Forbidden	Forbidden	D	40, 52, 57
D	Ammonia, anhydrous	2.2	UN1005	.....	2.2	13, T50	None	304	314	Forbidden	Forbidden	D	40, 52, 57
I	Ammonia solution, relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.	2.3	UN3318	.....	2.3, 8	4, N87, T50	None	304	314, 315	Forbidden	Forbidden	D	40, 52, 57
D	Ammonia solution, relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.	2.2	UN3318	.....	2.2	13, T50	None	304	314, 315	Forbidden	Forbidden	D	40, 52, 57
	Ammonia solutions, relative density less than 0.880 at 15 degrees C in water, with more than 35 percent but not more than 50 percent ammonia.	2.2	UN2073	.....	2.2	N87	306	304	314, 315	Forbidden	150 kg	E	40, 52, 57
	Ammonia solution, relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10 percent but not more than 35 percent ammonia.	8	UN2672	III	8	IB3, IP8, T7, TP1	154	203	241	5 L	60 L	A	40, 52, 85

Ammonium arsenate	UN1546	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	53
Ammonium azide	Forbidden										
Ammonium bifluoride, solid, see Ammonium hydrogen difluoride, solid.											
Ammonium bifluoride solution, see Ammonium hydrogen difluoride solution.											
Ammonium bromate	Forbidden										
Ammonium chlorate	UN1439	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	52
Ammonium dichromate	UN1843	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	36, 65, 66, 77
Ammonium dinitro-o-cresolate, solid											
Ammonium dinitro-o-cresolate solution.	UN3424	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	36, 66, 78, 91
.....		III	6.1	IB2, T7, TP2	153	203	241	60 L	220 L	A	36, 66, 78, 91
Ammonium fluoride	UN2505	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
Ammonium fluorosilicate	UN2854	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
Ammonium fulminate	Forbidden										
Ammonium hydrogen sulfate	UN2506	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	40
Ammonium hydrogendifluoride, solid	UN1727	II	8	IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	25, 40, 52
Ammonium hydrogendifluoride, solution.	UN2817	II	8, 6.1	IB2, N34, T8, TP2, TP13	154	202	243	1 L	30 L	B	40
.....		III	8, 6.1	IB3, N3, T4, TP1, TP13	154	203	241	5 L	60 L	B	40, 95
Ammonium hydrosulfide, solution, see Ammonium sulfide solution.											
Ammonium hydroxide, see Ammonia solutions, etc.											
Ammonium metavanadate	UN2859	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	44, 89, 100, 141
.....											
Ammonium nitrate based fertilizer	UN2067	III	5.1	52, 150, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	48, 59, 60, 66, 117
.....											
Ammonium nitrate based fertilizer	UN2071	III	9	132, IB8, IP3	155	213	240	200 kg	200 kg	A	48, 59, 60, 66, 124
Ammonium nitrate emulsion or Ammonium nitrate suspension or Ammonium nitrate gel, intermediate for blasting explosives.	UN3375	II	5.1	147, 163	None	214	214	Forbidden	Forbidden	D	
.....											
Ammonium nitrate-fuel oil mixture containing only prilled ammonium nitrate and fuel oil.	NA0331	II	1.5D ..		None ..	62	None	Forbidden	Forbidden	10	19E
Ammonium nitrate, liquid (hot concentrated solution).	UN2426	.....	5.1	B5, T7	None ..	None	243	Forbidden	Forbidden	D	59, 60

D

A W

D

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
	Ammonium nitrate, with more than 0.2 percent combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance.	1.1D	UN0222	II	1.1D ..		None ..	62	None	Forbidden	Forbidden	10	19E
	Ammonium nitrate, with not more than 0.2% total combustible material, including any organic substance, calculated as carbon to the exclusion of any other added substance.	5.1	UN1942	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	48, 59, 60, 116
	Ammonium nitrite	Forbidden	UN0402	II	1.1D ..		None ..	62	None	Forbidden	Forbidden	10	19E
	Ammonium perchlorate	1.1D	UN1442	II	5.1	107, A9, IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	E	58, 69
	Ammonium permanganate	Forbidden	UN1444	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	.....
	Ammonium persulfate	5.1	UN0004	II	1.1D ..		None ..	62	None	Forbidden	Forbidden	10	5E, 19E
	Ammonium picrate, dry or wetted with less than 10 percent water, by mass.	1.1D	UN1310	I	4.1	23, A2, N41	None ..	211	None	0.5 kg	0.5 kg	D	28, 36
	Ammonium picrate, wetted with not less than 10 percent water, by mass.	4.1	UN2818	II	8, 6.1	IB2, T7, TP2, TP13	154	202	243	1 L	30 L	B	12, 40, 52
	Ammonium polysulfide, solution	8	UN2861	III	8, 6.1	IB3, T4, TP1, TP13	154	203	241	5 L	60 L	B	12, 40, 52
	Ammonium polyvanadate	6.1	UN2861	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	44, 89, 100, 141
	Ammonium silicofluoride, see Ammonium fluorosilicate.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Ammonium sulfide solution	8	UN2683	II	8, 6.1, 3	IB1, T7, TP2, TP13	154	202	243	1 L	30 L	B	12, 22, 52, 100
	Ammunition, blank, see Cartridges for weapons, blank.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Ammunition, illuminating with or without burster, expelling charge or propelling charge.	1.2G ..	UN0171	II	1.2G ..	62	62	Forbidden	Forbidden	03	.....
Ammunition, illuminating with or without burster, expelling charge or propelling charge.	1.3G ..	UN0254	II	1.3G ..	62	62	Forbidden	Forbidden	03	.....
Ammunition, illuminating with or without burster, expelling charge or propelling charge.	1.4G ..	UN0297	II	1.4G ..	62	62	Forbidden	75 kg	02	.....
Ammunition, incendiary liquid or gel, with burster, expelling charge or propelling charge.	1.3J ...	UN0247	II	1.3J ...	62	None	Forbidden	Forbidden	04	23E
Ammunition, incendiary (water-activated contrivances) with burster, expelling charge or propelling charge, see Contrivances, water-activated, etc..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ammunition, incendiary, white phosphorus, with burster, expelling charge or propelling charge.	1.2H ..	UN0243	II	1.2H ..	62	62	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
Ammunition, incendiary, white phosphorus, with burster, expelling charge or propelling charge.	1.3H ..	UN0244	II	1.3H ..	62	62	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
Ammunition, incendiary with or without burster, expelling charge, or propelling charge.	1.2G ..	UN0009	II	1.2G ..	62	62	Forbidden	Forbidden	03	.....
Ammunition, incendiary with or without burster, expelling charge, or propelling charge.	1.3G ..	UN0010	II	1.3G ..	62	62	Forbidden	Forbidden	03	.....
Ammunition, incendiary with or without burster, expelling charge, or propelling charge.	1.4G ..	UN0300	II	1.4G ..	62	62	Forbidden	75 kg	02	.....
Ammunition, practice	1.4G ..	UN0362	II	1.4G ..	62	62	Forbidden	75 kg	02	.....
Ammunition, practice	1.3G ..	UN0488	II	1.3G ..	62	62	Forbidden	Forbidden	03	.....
Ammunition, proof	1.4G ..	UN0363	II	1.4G ..	62	62	Forbidden	75 kg	02	.....
Ammunition, rocket, see Warheads, rocket etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ammunition, SA (small arms), see Cartridges for weapons, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ammunition, smoke (water-activated contrivances), white phosphorus, with burster, expelling charge or propelling charge, see Contrivances, water-activated, etc. (UN 0248).	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 173.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/ral (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	<i>Ammunition, smoke (water-activated contivances), without white phos- phorus or phosphides, with burster, expelling charge or propelling charge, see Contrivances, water- activated, etc. (UN 0249).</i>												
	<i>Ammunition, smoke, white phos- phorus with burster, expelling charge, or propelling charge.</i>	1.2H	UN0245	II	1.2H ..		62	62	Forbidden	Forbidden	08	8E, 14E, 15E, 17E	
	<i>Ammunition, smoke, white phos- phorus with burster, expelling charge, or propelling charge.</i>	1.3H	UN0246	II	1.3H ..		62	62	Forbidden	Forbidden	08	8E, 14E, 15E, 17E	
	<i>Ammunition, smoke with or without burster, expelling charge or propel- ling charge.</i>	1.2G	UN0015	II	1.2G ..		62	62	Forbidden	Forbidden		8E, 17E, 20E	
	<i>Ammunition, smoke with or without burster, expelling charge or propel- ling charge.</i>	1.3G	UN0016	II	1.3G ..		62	62	Forbidden	Forbidden		8E, 17E, 20E	
	<i>Ammunition, smoke with or without burster, expelling charge or propel- ling charge.</i>	1.4G	UN0303	II	1.4G ..		62	62	Forbidden	75 kg		7E, 8E, 14E, 15E, 17E	
	<i>Ammunition, sporting, see Cartridges for weapons, etc. (UN 0012; UN 0328; UN 0339).</i>												
	<i>Ammunition, tear-producing, non-ex- plosive, without burster or expelling charge, non-fuzed.</i>	6.1	UN2017	II	6.1, 8		None ..	212 ..	None	50 kg	E	13, 40	
	<i>Ammunition, tear-producing with burster, expelling charge or propel- ling charge.</i>	1.2G	UN0018	II	1.2G, 8, 6.1		62	62	Forbidden	Forbidden		8E, 17E, 20E	
	<i>Ammunition, tear-producing with burster, expelling charge or propel- ling charge.</i>	1.3G	UN0019	II	1.3G, 8, 6.1		62	62	Forbidden	Forbidden		8E, 17E, 20E	

UN number	Proper shipping name	Class	Division	Subdivision	Quantity	Special provisions	Other	Additional	
UN0301	Ammunition, tear-producing with burster, expelling charge or propelling charge.	II	1.4G, 8, 6.1	1.4G	62	62	Forbidden	75 kg	7E, 8E, 14E, 15E, 17E, 13, 40
UN2016	Ammunition, toxic, non-explosive, without burster or expelling charge, non-fuzed.	II	6.1	6.1	None	212	Forbidden	100 kg	E
UN0020	Ammunition, toxic (water-activated contrivances), with burster, expelling charge or propelling charge, see Contrivances, water-activated, etc.	II	1.2K, 6.1	1.2K	62	None	Forbidden	Forbidden	8E, 14E, 15E, 17E
UN0021	Ammunition, toxic with burster, expelling charge, or propelling charge.	II	1.3K, 6.1	1.3K	62	None	Forbidden	Forbidden	8E, 14E, 15E, 17E
UN1104	Amyl acetates	III	3	3	203	242	60 L	220 L	A
UN2819	Amyl acid phosphate	III	8	150	203	241	5 L	60 L	A
UN2620	Amyl butyrates	III	3	154	203	242	60 L	220 L	A
UN1107	Amyl chlorides	III	3	150	203	242	5 L	60 L	B
UN1109	Amyl formates	III	3	150	203	242	60 L	220 L	A
UN1111	Amyl mercaptans	III	3	None	202	242	5 L	60 L	B
UN1110	n-Amyl methyl ketone	III	3	150	203	242	60 L	220 L	A
UN1112	Amyl nitrate	III	3	150	203	242	60 L	220 L	A
UN1113	Amyl nitrites	II	3, 8	150	202	242	5 L	60 L	E
UN1106	Amylamines	III	3, 8	150	202	243	1 L	5 L	B
UN1728	Amyltrichlorosilane	II	8	None	203	242	5 L	60 L	A
	Anhydrous ammonia, see Ammonia, anhydrous.				206	242	Forbidden	30 L	C
	Anhydrous hydrofluoric acid, see Hydrogen fluoride, anhydrous.								
UN1547	Aniline	II	6.1	153	202	243	5 L	60 L	A
UN1548	Aniline hydrochloride	III	6.1	153	213	240	100 kg	200 kg	A
	Aniline oil, see Aniline								
UN2431	Anisidines	III	6.1	153	203	241	60 L	220 L	A
UN2222	Anisole	III	3	150	203	242	60 L	220 L	A
UN1729	Anisoyl chloride	II	8	154	212	240	15 kg	50 kg	A
	Anti-freeze, liquid, see Flammable liquids, n.o.s.								
	Antimony compounds, see Antimony trichloride.								
UN3141	Antimony compounds, inorganic, liquid, n.o.s.	III	6.1	153	203	241	60 L	220 L	A

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Antimony compounds, inorganic, solid, n.o.s.	6.1	UN1549	III	6.1	35, IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Antimony lactate	6.1	UN1550	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Antimony pentachloride, liquid	8	UN1730	II	8	B2, IB2, T7, TP2	None	202	242	1 L	30 L	C	40
	Antimony pentachloride, solutions	8	UN1731	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	40
	Antimony pentachloride, solutions	8	UN1731	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	C	40
	Antimony pentafluoride	8	UN1732	II	8, 6.1	A3, A6, A7, A10, IB2, NS, N36, T7, TP2	None	202	243	Forbidden	30 L	D	44, 89, 100, 141
	Antimony potassium tartrate	6.1	UN1551	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Antimony powder	6.1	UN2871	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Antimony sulfide and a chlorate, mixtures of.	Forbidden											
	Antimony sulfide, solid, see Antimony compounds, inorganic, n.o.s.												
	Antimony trichloride, liquid	8	UN1733	II	8	B2, IB2	154	202	242	1 L	30 L	C	40
	Antimony trichloride, solid	8	UN1733	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	40
	Aqua ammonia, see Ammonia solution, etc.												
	Argon, compressed	2.2	UN1006	2.2	306, 307	302	314, 315	75 kg	150 kg	A			
	Argon, refrigerated liquid (cryogenic liquid)	2.2	UN1951		2.2	T75, TP5	320	316	318	50 kg	500 kg	B	
	Arsenic	6.1	UN1558	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Arsenic acid, liquid	6.1	UN1553	I	6.1	T20, TP2, TP7, TP13	None	201	243	1 L	30 L	B	46
	Arsenic acid, solid	6.1	UN1554	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Arsenic bromide	6.1	UN1555	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	12, 40
	Arsenic chloride, see Arsenic trichloride.												
	Arsenic compounds, liquid, n.o.s. inorganic, including arsenates, n.o.s.; arsenites; n.o.s.; arsenic sulfides, n.o.s.; and organic compounds of arsenic, n.o.s.	6.1	UN1556	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40, 137
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40, 137
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	B	40, 137

	6.1	UN1557	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	137
Arsenic compounds, solid, n.o.s. including arsenates, n.o.s., arsenites, n.o.s., arsenic sulfides, n.o.s.; and organic compounds of arsenic, n.o.s.												
Arsenic pentoxide	6.1	UN1559	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	137
Arsenic sulfide and a chlorate, mixtures of	6.1	Forbidden	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	137
Arsenic trichloride	6.1	UN1560	I	6.1	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40
Arsenic trioxide	6.1	UN1561	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Arsenic white, see Arsenic trioxide.												
Arsenical dust	6.1	UN1562	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Arsenical pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	UN2760	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
Arsenical pesticides, liquid, toxic	6.1	UN2994	II	6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
Arsenical pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN2993	III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Arsenous acid, solid, see Arsenic trioxide.												
Arsenous and mercuric iodide solution, see Arsenic compounds, liquid, n.o.s.												
Arsine	2.3	UN2188	.....	2.3, 2.1	1	None	192	245	Forbidden	Forbidden	D	40
Articles, explosive, extremely insensitive or Articles, EET.	1.6N	UN0486	II	1.6N		None	62	None	Forbidden	Forbidden	07	
Articles, explosive, n.o.s.	1.4S	UN0349	II	1.4S		None	62	None	25 kg	100 kg	05	
Articles, explosive, n.o.s.	1.4B	UN0350	II	1.4B		None	62	None	Forbidden	Forbidden	06	
Articles, explosive, n.o.s.	1.4C	UN0351	II	1.4C		None	62	None	Forbidden	75 kg	06	
Articles, explosive, n.o.s.	1.4D	UN0352	II	1.4D		None	62	None	Forbidden	75 kg	06	
Articles, explosive, n.o.s.	1.4G	UN0353	II	1.4G		None	62	None	Forbidden	75 kg	06	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
G	Articles, explosive, n.o.s	1.1L	UN0354	II	1.1L		None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Articles, explosive, n.o.s	1.2L	UN0355	II	1.2L		None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Articles, explosive, n.o.s	1.3L	UN0356	II	1.3L		None	62	None	Forbidden	Forbidden	08	14E, 15E, 17E
G	Articles, explosive, n.o.s	1.1C	UN0462	II	1.1C		None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s	1.1D	UN0463	II	1.1D		None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s	1.1E	UN0464	II	1.1E		None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s	1.1F	UN0465	II	1.1F		None	62	None	Forbidden	Forbidden	08	
G	Articles, explosive, n.o.s	1.2C	UN0466	II	1.2C		None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s	1.2D	UN0467	II	1.2D		None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s	1.2E	UN0468	II	1.2E		None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s	1.2F	UN0469	II	1.2F		None	62	None	Forbidden	Forbidden	08	
G	Articles, explosive, n.o.s	1.3C	UN0470	II	1.3C		None	62	None	Forbidden	Forbidden	07	
G	Articles, explosive, n.o.s	1.4E	UN0471	II	1.4E		None	62	None	Forbidden	Forbidden	06	
G	Articles, explosive, n.o.s	1.4F	UN0472	II	1.4F		None	62	None	Forbidden	Forbidden	08	
G	Articles, pressurized pneumatic or hydraulic containing non-flammable gas.	2.2	UN3164	.....	2.2		306	302, 304	None	No limit	No limit	A	
	Articles, pyrophoric	1.2L	UN0380	II	1.2L		None	62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Articles, pyrotechnic for technical purposes.	1.1G	UN0428	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Articles, pyrotechnic for technical purposes.	1.2G	UN0429	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Articles, pyrotechnic for technical purposes.	1.3G	UN0430	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Articles, pyrotechnic for technical purposes.	1.4G	UN0431	II	1.4G		None	62	None	Forbidden	75 kg	06	

Articles, pyrotechnic for technical purposes.	1.4S	UN	II	1.4S	None	62	None	25 kg	100 kg	05	
D Asbestos	9	UN0432	III	9	155	216	156, IB8, IP2, IP4	200 kg	200 kg	A	34, 40
D Ascendole (organic peroxide)	Forbidden		III	3	150	203	IB3, T1, TP3	Forbidden	Forbidden	D	
D Asphalt, at or above its flash point											
D Asphalt, cut back, see Tars, liquid, etc.											
Automobile, motorcycle, tractor, other self-propelled vehicle, engine, or other mechanical apparatus, see Vehicles or Battery etc.											
A G Aviation regulated liquid, n.o.s.	9	UN3334		9	155	204	A35	No limit	No limit	A	
A G Aviation regulated solid, n.o.s.	9	UN3335		9	155	204	A35	No limit	No limit	A	
Azaurolic acid (salt of) (dry)	Forbidden										
Azido guanidine picrate (dry)	Forbidden										
5-Azido-1-hydroxy tetrazole	Forbidden										
Azido hydroxy tetrazole (mercury and silver salts)	Forbidden										
3-Azido-1,2-Propylene glycol dinitrate	Forbidden										
Azidothiocarbonic acid	Forbidden										
Azidoethyl nitrate	Forbidden										
1-Azidiniophosphine oxide-(tris), see Tris-(1-azidiniyl) phosphine oxide, solution.											
Azodicarbonamide	4.1	UN3242	II	4.1	151	223	38, IB8, T3, TP33	Forbidden	Forbidden	D	2, 52, 53, 74
Azoletrazole (dry)	Forbidden										
Barium	4.3	UN1400	II	4.3	151	212	A19, IB7, IP2, T3, TP33	15 kg	50 kg	E	52
Barium alloys, pyrophoric	4.2	UN1854	I	4.2	None	181	T21, TP7, TP33	Forbidden	Forbidden	D	
Barium azide, dry or wetted with less than 50 percent water, by mass.	1.1A	UN0224	II	1.1A, 6.1	None	62	111, 117	Forbidden	Forbidden	12	
Barium azide, wetted with not less than 50 percent water, by mass.	4.1	UN1571	I	4.1, 6.1	None	182	162, A2	Forbidden	0.5 kg	D	28
Barium bromate	5.1	UN2719	II	5.1, 6.1	152	212	IB8, IP2, IP4, T3, TP33	5 kg	25 kg	A	56, 58
Barium chlorate, solid	5.1	UN1445	II	5.1, 6.1	152	212	A9, IB6, IP2, N34, T3, TP33	5 kg	25 kg	A	56, 58
Barium chlorate, solution	5.1	UN3405	II	5.1, 6.1	152	202	A9, IB2, N34, T4, TP1	1 L	5 L	A	56, 58, 133
			III	5.1, 6.1	152	203	A9, IB2, N34, T4, TP1	2.5 L	30 L	A	56, 58, 133
Barium compounds, n.o.s.	6.1	UN1564	II	6.1	153	212	IB8, IP2, IP4, T3, TP33	25 kg	100 kg	A	
			III	6.1	153	213	IB8, IP3, T1, TP33	100 kg	200 kg	A	
Barium cyanide	6.1	UN1565	I	6.1	None	211	IB7, IP1, N74, N75, T6, TP33	5 kg	50 kg	A	40, 52
Barium hypochlorite with more than 22 percent available chlorine.	5.1	UN2741	II	5.1, 6.1	152	212	A7, A8, IB8, IP2, IP4, N34, T3, TP33	5 kg	25 kg	B	4, 52, 56, 58, 106
Barium nitrate	5.1	UN1446	II	5.1, 6.1	152	212	IB8, IP2, IP4, T3, TP33	5 kg	25 kg	A	

§ 172.101 HAZARDOUS MATERIALS TABLE

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage		
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)	
(1)	Barium oxide	6.1	UN1884	III	6.1	IB8, IP3, T1, TP33 IB6, IP2, T3, TP33 IB2, T4, TP1 IB2, T4, TP1 IB6, IP2, T3, TP33 A9, IB6, IP2, T3, TP33	153	213	240	100 kg	200 kg	A	56, 58	
	Barium perchlorate, solid	5.1	UN1447	II	5.1, 6.1		152	212	242	5 kg	25 kg	A	56, 58, 133	
	Barium perchlorate, solution	5.1	UN3406	II	5.1, 6.1		152	202	243	1 L	5 L	A	56, 58, 133	
	.....	.....	.....	.....	.....		152	203	242	2.5 L	30 L	A	56, 58, 133	
	Barium permanganate	5.1	UN1448	II	5.1, 6.1		152	212	242	5 kg	25 kg	D	56, 58, 138	
	Barium peroxide	5.1	UN1449	II	5.1, 6.1		152	212	242	5 kg	25 kg	A	13, 52, 56, 75	
	Barium selenate, see Selenates or Selenites	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	.....
	Barium selenite, see Selenates or Selenites	.....	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	.....
	Batteries, containing sodium	4.3	UN3292	II	4.3		189	189	189	Forbidden	No limit	A	52	52
	Batteries, dry, containing potassium hydroxide solid, electric, storage	8	UN3028	III	8		237	None	213	None	25 kg gross	230 kg gross	A	52
	Batteries, dry, sealed, n.o.s. ....	.....	.....	.....	.....		.....	130	.....	.....	.....	.....	.....	.....
	Batteries, wet, filled with acid, electric storage	8	UN2794	III	8		8	.....	159	159	30 kg gross	No limit	A	146
	Batteries, wet, filled with alkali, electric storage	8	UN2795	III	8		8	.....	159	159	30 kg gross	No limit	A	52, 146
	Batteries, wet, non-spillable, electric storage	8	UN2800	III	8		8	.....	159a	159	No limit	No limit	A	.....
Battery fluid, acid	8	UN2796	II	8	8	A3, A7, B2, B15, IB2, N6, N34, T8, TP2	154	202	1 L	30 L	B	.....	
Battery fluid, alkali	8	UN2797	II	8	8	B2, IB2, N6, T7, TP2, TP28	154	202	242	1 L	A	29		
Battery, lithium type, see Lithium bat-teries etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Battery-powered vehicle or Battery-powered equipment	9	UN3171	.....	9	9	134	220	None	No limit	No limit	.....	.....
Battery, wet, filled with acid or alkali with vehicle or mechanical equip-ment containing an internal com-bustion engine, see Vehicle, etc. or Engines, internal combustion, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

+	Benzaldehyde	9	UN1990	III	9	IB3, T2, TP1	203	241	100 L	220 L	A	40
	Benzene	3	UN1114	II	3	IB2, T4, TP1	202	242	5 L	60 L	B	40
	Benzene diazonium chloride (dry)	Forbidden										
	Benzene diazonium nitrate (dry)	Forbidden										
	Benzene phosphorus dichloride, see Phenyl phosphorus dichloride.											
	Benzene phosphorus trichloride, see Phenyl phosphorus trichloride.											
	Benzene sulfanyl chloride	8	UN2225	III	8	IB3, T4, TP1	154	203	5 L	60 L	A	40
	Benzene trizonide	Forbidden										
	Benzenetriol, see Phenyl mercaptan											
	Benzidine	6.1	UN1885	II	6.1	IB8, IP2, IP4, T3, TP33	153	242	25 kg	100 kg	A	
	Benzol, see Benzene											
	Benzonitrile	6.1	UN2224	II	6.1	IB2, T7, TP2	153	243	5 L	60 L	A	40, 52
	Benzonitrene	6.1	UN2587	II	6.1	IB2, T3, TP33	153	242	25 kg	100 kg	A	40
	Benzotrifluoride	8	UN2226	II	8	B2, IB2, T7, TP2	154	242	1 L	30 L	A	40
	Benzotrifluoride	3	UN2338	II	3	IB2, T4, TP1	150	242	5 L	60 L	B	40
	Benzoxiazoles (dry)	Forbidden										
	Benzoyl azide	8	UN1736	II	8	B2, IB2, T8, TP2, TP13	154	242	1 L	30 L	C	40
	Benzoyl chloride	6.1	UN1737	II	6.1, 8	A3, A7, IB2, N33, N34	None	243	1 L	30 L	D	13, 40.
	Benzyl bromide	6.1	UN1738	II	6.1, 8	A3, A7, T8, TP2, TP13	None	243	1 L	30 L	D	13, 40.
	Benzyl chloride	6.1	UN1738	II	6.1, 8	A3, A7, B70, IB2, N33, N42, T8, TP2, TP13	153	243	1 L	30 L	D	13, 40.
	Benzyl chloride unstabilized	6.1	UN1738	II	6.1, 8	A3, A7, B8, B11, IB2, N33, N34, N43, T8, TP2, TP13	202	243	1 L	30 L	D	13, 40.
	Benzyl chloroformate	8	UN1739	I	8	A3, A6, B4, N41, T10, TP2, TP13	None	243	Forbidden	2.5 L	D	40
	Benzyl iodide	6.1	UN2853	II	6.1	IB2, T7, TP2	153	243	5 L	60 L	B	12, 40
	Benzylidimethylamine	8	UN2619	II	8, 3	B2, IB2, T7, TP2	154	243	1 L	30 L	A	40, 48
	Benzylidene chloride	6.1	UN1886	II	6.1	IB2, T7, TP2	153	243	5 L	60 L	D	40
	Beryllium compounds, n.o.s.	6.1	UN1566	III	6.1	IB8, IP2, IP4, T3, TP33	153	242	25 kg	100 kg	A	
	Beryllium nitrate	5.1	UN2464	II	5.1, 6.1	IB8, IP3, T1, TP33	153	240	100 kg	200 kg	A	
	Beryllium, powder	6.1	UN1567	II	6.1, 4.1	IB8, IP2, IP4, T3, TP33	153	242	5 kg	25 kg	A	
	Bicyclo [2,2,1] hepta-2,5-diene, stabilized or 2,5-Norbornadiene, stabilized.	3	UN2251	II	3	IB2, T7, TP2	150	242	5 L	60 L	D	
	Biological substance, Category B	6.2	UN3373			A82	134	None	4 L or 4 kg	4 L or 4 kg	A	40
	Biphenyl triozonide	Forbidden							Forbidden	30 L	E	
	Bipyridilium pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	UN2782	I	3, 6.1	T14, TP2, TP13, TP27	None	243	Forbidden	30 L	E	
	Bipyridilium pesticides, liquid, toxic	6.1	UN3016	II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	243	1 L	60 L	B	40
	Bipyridilium pesticides, liquid, toxic	6.1	UN3016	I	6.1	T14, TP2, TP13, TP27	None	243	1 L	30 L	B	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
												
	Bipyridilium pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN3015	I	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
												
	Bipyridilium pesticides, solid, toxic	6.1	UN2781	III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
												
	Bis (Aminopropyl) piperazine, see Corrosive liquid, n.o.s.					T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	21, 40
	Bisulfate, aqueous solution	8	UN2837	II	8	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	21, 40
												
	Bisulfites, aqueous solutions, n.o.s.					B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	21, 40
	Black powder, compressed or Gun- powder, in pellets or Gunpowder, in pellets.	1.1D	UN0028	III	8	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
	Black powder or Gunpowder, granu- lar or as a meal.	1.1D	UN0027	II	1.1D	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	Black powder for small arms	4.1	NA0027	I	4.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Blasting agent, n.o.s., see Explo- sives, blasting etc.					A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	
	Blasting cap assemblies, see Deto- nator assemblies, non-electric, for blasting.					A7, IB3, N34, T4, TP1	154	203	241	5 L	60 L	A	
	Blasting caps, electric, see Deto- nators, electric for blasting.					IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40, 52
	Blasting caps, non-electric, see Deto- nators, non-electric, for blasting.						None	62	None	Forbidden	Forbidden	10	
	Bleaching powder, see Calcium hy- pochlorite mixtures, etc.												
I	Blue asbestos (Crocidolite) or Brown asbestos (amosite, myosorite).	9	UN2212	II	9	156, IB8, IP2, IP4, T3, TP33	155	216	240	Forbidden	Forbidden	A	34, 40

Bombs, photo-flash	1.1F	UN0037	II	1.1F	None	62	None	Forbidden	Forbidden	08	.....
Bombs, photo-flash	1.1D	UN0038	II	1.1D	62	62	62	Forbidden	Forbidden	03	.....
Bombs, photo-flash	1.2G	UN0039	II	1.2G	62	62	62	Forbidden	Forbidden	03	.....
Bombs, photo-flash	1.3G	UN0299	II	1.3G	62	62	62	Forbidden	Forbidden	03	.....
Bombs, smoke, non-explosive, with corrosive liquid, without initiating device.	8	UN2028	II	8	None	160	None	Forbidden	50 kg	E	40
Bombs, with bursting charge	1.1F	UN0033	II	1.1F	62	62	62	Forbidden	Forbidden	08	.....
Bombs, with bursting charge	1.1D	UN0034	II	1.1D	62	62	62	Forbidden	Forbidden	03	.....
Bombs, with bursting charge	1.2D	UN0035	II	1.2D	62	62	62	Forbidden	Forbidden	03	.....
Bombs, with bursting charge	1.2F	UN0291	II	1.2F	62	62	62	Forbidden	Forbidden	08	.....
Bombs with flammable liquid, with bursting charge.	1.1J	UN0399	II	1.1J	62	62	62	Forbidden	Forbidden	04	23E
Bombs with flammable liquid, with bursting charge.	1.2J	UN0400	II	1.2J	62	62	62	Forbidden	Forbidden	04	23E
Boosters with detonator	1.1B	UN0225	II	1.1B	None	62	None	Forbidden	Forbidden	11	.....
Boosters with detonator	1.2B	UN0268	II	1.2B	None	62	None	Forbidden	Forbidden	07	.....
Boosters, without detonator	1.1D	UN0042	II	1.1D	None	62	None	Forbidden	Forbidden	07	.....
Boosters, without detonator	1.2D	UN0283	II	1.2D	None	62	None	Forbidden	Forbidden	07	.....
Borate and borate mixtures, see Chlorate and borate mixtures.											
Borneol	4.1	UN1312	III	4.1	None	213	240	25 kg	100 kg	A	12
Boron tribromide	8	UN2692	I	8, 6.1	None	227	244	Forbidden	Forbidden	C	.....
Boron trichloride	2.3	UN1741	.....	2.3, 8	None	304	314	Forbidden	Forbidden	D	25, 40
Boron trifluoride	2.3	UN1008	.....	2.3, 8	None	302	314, 315	Forbidden	Forbidden	D	40
Boron trifluoride acetic acid complex, liquid.	8	UN1742	II	8	154	202	242	1 L	30 L	A	.....
Boron trifluoride acetic acid complex, solid.	8	UN3419	II	8	154	212	240	15 kg	50 kg	A	.....
Boron trifluoride diethyl etherate	8	UN2604	I	8, 3	None	201	243	0.5 L	2.5 L	D	40
Boron trifluoride dihydrate	8	UN2851	II	8	154	212	240	15 kg	50 kg	B	12, 40,
Boron trifluoride dimethyl etherate	4.3	UN2965	I	4.3, 8, 3	None	201	243	Forbidden	1 L	D	21, 28,
											40, 48,
											100
Boron trifluoride propionic acid complex, liquid.	8	UN1743	II	8	154	202	242	1 L	30 L	A	.....
Boron trifluoride propionic acid complex, solid.	8	UN3420	II	8	154	212	240	15 kg	50 kg	A	.....
Box toe gum, see Nitrocellulose etc											
Bromates, inorganic, aqueous solution, n.o.s.	5.1	UN3213	II	5.1	152	202	242	1 L	5 L	B	56, 58,
											133
Bromates, inorganic, n.o.s.	5.1	UN1450	III	5.1	152	203	241	2.5 L	30 L	B	56, 58,
Bromine	8	UN1744	I	8, 6.1	None	212	242	5 kg	25 kg	A	133
								Forbidden	Forbidden	D	12, 40,
											66, 74,
											89, 90

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	Bromine azide	Forbidden											
	Bromine chloride	2.3	UN2901		2.3, 8, 5.1,		None	304	314, 315	Forbidden	Forbidden	D	40, 89, 66, 74, 89, 90
+	Bromine pentafluoride	5.1	UN1745	I	5.1, 6.1, 8,	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44	None	228	244	Forbidden	Forbidden	D	25, 40, 66, 90
+	Bromine solutions	8	UN1744	I	8, 6.1	1, B9, B85, N34, N43, T22, TP2, TP10, TP13	None	226	249	Forbidden	Forbidden	D	12, 40, 66, 74, 89, 90
+	Bromine solutions	8	UN1744	I	8, 6.1	2, B9, B85, N34, N43, T22, TP2, TP10, TP13	None	227	249	Forbidden	Forbidden	D	12, 40, 66, 74, 89, 90
+	Bromine trifluoride	5.1	UN1746	I	5.1, 6.1, 8,	2, B9, B14, B32, T22, TP2, TP13, TP38, TP45	None	228	244	Forbidden	Forbidden	D	25, 40, 66, 90
	4-Bromo-1,2-dinitrobenzene	Forbidden											
	4-Bromo-1,2-dinitrobenzene (unstable at 59 degrees C)	Forbidden											
	1-Bromo-3-chloropropane	6.1	UN2688	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	1-Bromo-3-methylbutane	3	UN2341	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	1-Bromo-3-nitrobenzene (unstable at 56 degrees C)	Forbidden											
	2-Bromo-2-nitropropane-1,3-diol	4.1	UN3241	III	4.1	46, IB8, IP3	151	213	None	25 kg	50 kg	C	12, 25, 40
	Bromoacetic acid, solid	8	UN3425	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	
	Bromoacetic acid solution	8	UN1938	II	8	A7, B2, IB2, T7, TP2, T3, TP33	154	202	242	1 L	30 L	A	40
	Bromoacetone	6.1	UN1569	III	6.1, 3	B2, IB3, T7, TP2	154	203	241	5 L	60 L	A	40
+	Bromocetyl bromide	8	UN2513	II	8	2, T20, TP2, TP13	None	193	245	Forbidden	Forbidden	D	40, 53
	Bromobenzene	3	UN2514	III	3	B2, IB2, T8, TP2	154	202	242	1 L	30 L	C	
	Bromobenzyl cyanides, liquid	6.1	UN1694	I	6.1	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Bromobenzyl cyanides, solid	6.1	UN3449	I	6.1	T14, TP2, TP13	None	201	243	Forbidden	Forbidden	D	12, 40, 52
	1-Bromobutane	3	UN1126	II	3	T6, TP33	None	211	242	5 kg	50 kg	D	12, 40, 52
	2-Bromobutane	3	UN2339	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Bromochloromethane	6.1	UN1887	III	6.1	B1, IB3, T4, TP1	153	203	241	60 L	220 L	A	

2-Bromomethyl ethyl ether	3	UN2340	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Bromoforn	6.1	UN2515	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12, 40
Bromomethylpropanes	3	UN2342	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
2-Bromopentane	3	UN2343	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Bromopropanes	3	UN2344	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
3-Bromopropyne	3	UN2345	III	3	IB3, T2, TP1	150	203	242	60 L	220 L	A	
Bromosilane	Forbidden		II	3	IB2, T4, TP1	150	202	242	5 L	60 L	D	40
Bromotoluene-alpha, see Benzyl bromide.												
Bromotrifluoroethylene	2.1	UN2419		2.1		None	304	314, 315	Forbidden	150 kg	B	40
Bromotrifluoromethane or Refrigerant gas, R 13B1.	2.2	UN1009		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
Burcne	6.1	UN1570	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	
Bursters, explosive	1.1D	UN0043	II	1.1D		None	62	None	Forbidden	Forbidden	07	
Butadienes, stabilized or Butadienes and Hydrocarbon mixture, stabilized containing more than 40% butadienes.	2.1	UN1010		2.1	T50	306	304	314, 315	Forbidden	150 kg	B	40
Butane see also Petroleum gases, liquefied.	2.1	UN1011		2.1	19, T50	306	304	314, 315	Forbidden	150 kg	E	40
Butane, butane mixtures and mixtures having similar properties in cartridges each not exceeding 500 grams, see Receptacles, etc.												
Butanedione	3	UN2346	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
1,2,4-Butanetriol trinitrate	Forbidden		II	3	IB2, T4, TP1, TP29	150	202	242	5 L	60 L	B	
Butanols	3	UN1120	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
tert-Butoxycarbonyl azide	Forbidden											
Butyl acetates	3	UN1123	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Butyl acid phosphate	3	UN1123	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Butyl acrylates, stabilized	8	UN1718	III	8	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Butyl alcohols, see Butanols	3	UN2348	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Butyl benzenes	3	UN2709	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
n-Butyl bromide, see 1-Bromobutane												
n-Butyl chloride, see Chlorobutanes												
sec-Butyl chloroformate	6.1	NA2742	I	6.1, 3, 8	2, B9, B14, B32, B74, T20, TP4, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 13, 22, 25, 40, 48, 100
n-Butyl chloroformate	6.1	UN2743	I	6.1, 8, 3	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 13, 21, 25, 40, 100
Butyl ethers, see Dibutyl ethers												
Butyl ethyl ether, see Ethyl butyl ether.												
n-Butyl formate	3	UN1128	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	

D

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
	<i>tert</i> -Butyl hydroperoxide, with more than 90 percent with water.	Forbidden											
	<i>tert</i> -Butyl hypochlorite	4.2	UN3255	I	4.2, 8		None	211	243	Forbidden	Forbidden	D	
	<i>N</i> - <i>n</i> -Butyl imidazole	6.1	UN2690	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	<i>tert</i> -Butyl isocyanate	6.1	UN2484	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	
	<i>n</i> -Butyl isocyanate	6.1	UN2485	I	6.1, 3	2, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	
	Butyl mercaptans	3	UN2347	II	3	A3, A6, IB2, T4, TP1	150	202	242	5 L	60 L	D	
	<i>n</i> -Butyl methacrylate, stabilized	3	UN2227	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Butyl methyl ether	3	UN2350	III	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Butyl nitrites	3	UN2351	I	3	T11, TP1, TP8, TP27	150	201	243	1 L	30 L	E	
	<i>tert</i> -Butyl peroxyacetate, with more than 76 percent in solution.	Forbidden				IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>n</i> -Butyl peroxydicarbonate, with more than 52 percent in solution.	Forbidden				B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	<i>tert</i> -Butyl peroxyisobutyrate, with more than 77 percent in solution.	Forbidden											
	Butyl phosphoric acid, see Butyl acid phosphate.												
	Butyl propionates	3	UN1914	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	5- <i>tert</i> -Butyl-2,4,6-trinitro- <i>m</i> -xylene or Musk xylene.	4.1	UN2956	III	4.1	159	None	223	None	Forbidden	Forbidden	D	
	Butyl vinyl ether, stabilized	3	UN2352	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>n</i> -Butylamine	3	UN1125	II	3, 8	IB2, T7, TP1	150	202	242	1 L	150	5 L	
	<i>N</i> -Butylaniline	6.1	UN2738	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	<i>tert</i> -Butylcyclohexylchloroformate	6.1	UN2747	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Butylene see also Petroleum gases, liquefied.	2.1	UN1012		2.1	19, T50	306	304	314, 315	Forbidden	150 kg	E	
	1,2-Butylene oxide, stabilized	3	UN3022	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Butyltoluenes	6.1	UN2667	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Butyltrichlorosilane	8	UN1747	II	8, 3	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	243	Forbidden	30 L	C	

1,4-Butynediol	6.1	UN2716	III	6.1	A1, IB8, IP3, T1, TP33	None	213	240	100 kg	200 kg	C	52, 53, 70
Butyraldehyde	3	UN1129	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Butyraldixime	3	UN2840	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Butyric acid	8	UN2820	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	12
Butyric anhydride	8	UN2739	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
Butyronitrile	3	UN2411	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
Butyl vinyl chloride	3	UN2353	II	3, 8	IB2, T8, TP2, TP13	150	202	243	1 L	5 L	C	40
Cacodylic acid	6.1	UN1572	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	E	52
Cadmium compounds	6.1	UN2570	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	
Caesium hydroxide	8	UN2682	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Caesium hydroxide solution	8	UN2681	III	8	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Calcium	4.3	UN1401	III	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	29, 52
Calcium arsenate	6.1	UN1573	II	4.3	IB7, IP2, T3, TP33	151	212	241	1 L	30 L	A	29, 52
Calcium arsenate and calcium arsenite, mixtures, solid	6.1	UN1573	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg	E	52
Calcium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.	6.1	UN1574	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Calcium carbide	4.3	UN1402	I	4.3	A1, A8, B55, B59, IB4, IP1, N34, T9, TP7, TP33	None	211	242	Forbidden	15 kg	B	52
Calcium chlorate	5.1	UN1452	II	5.1	A1, A8, B55, B59, IB7, IP2, N34, T3, TP33	151	212	241	15 kg	50 kg	B	52
Calcium chlorate aqueous solution	5.1	UN2429	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Calcium chlorite	5.1	UN1453	III	5.1	A2, IB2, N41, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
Calcium cyanamide with more than 0.1 percent of calcium carbide	4.3	UN1403	III	5.1	A2, IB2, N41, T4, TP1	152	202	242	2.5 L	30 L	B	56, 58, 133
Calcium cyanide	6.1	UN1575	I	6.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Calcium dithionite or Calcium hydro-sulfite	4.2	UN1923	II	4.2	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	52
Calcium hydride	4.3	UN1404	I	4.3	IB7, IP1, N79, N80, T6, TP33	None	211	242	5 kg	50 kg	A	40, 52
Calcium hydrosulfite, see Calcium dithionite	4.3	UN1404	I	4.3	A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	E	13
Calcium hypochlorite, dry or Calcium hypochlorite mixtures dry with more than 39 percent available chlorine (8.8 percent available oxygen)	5.1	UN1748	II	5.1	A19, N40	None	211	242	Forbidden	15 kg	E	52
					165, 166, A7, A9, IB8, IP2, IP4, IP13, N34, W9	152	212	None	5 kg	25 kg	D	4, 25, 48, 52, 56, 58, 69, 142

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
				III	5.1	165, 171, A7, A9, IB8, IP4, IP13, N34, W9	152	213	240	25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium hypochlorite, hydrated or Calcium hypochlorite, hydrated mixtures, with not less than 5.5 percent but not more than 16 percent water.	5.1	UN2880	II	5.1	165, IB8, IP2, IP4, IP13, W9	152	212	240	5 kg	25 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium hypochlorite mixtures, dry, with more than 10 percent but not more than 39 percent available chlorine.	5.1	UN2208	III	5.1	165, A1, A29, IB8, IP3, IP13, N34, W9	152	213	240	25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium manganese silicon	4.3	UN2844	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	103
	Calcium nitrate	5.1	UN1454	III	5.1	34, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	103
	Calcium oxide	8	UN1910	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	103
	Calcium perchlorate	5.1	UN1455	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Calcium permanganate	5.1	UN1456	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
	Calcium peroxide	5.1	UN1457	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 56, 75
	Calcium phosphide	4.3	UN1360	I	4.3, 6.1	A8, A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
	Calcium, pyrophoric or Calcium al- loys, pyrophoric.	4.2	UN1855	I	4.2		None	187	None	Forbidden	Forbidden	D	85
	Calcium resinates	4.1	UN1313	III	4.1	A1, A19, IB6, T1, TP33	None	213	240	25 kg	100 kg	A	103
	Calcium resinates, fused	4.1	UN1314	III	4.1	A1, A19, IB4, T1, TP33	None	213	240	25 kg	100 kg	A	103
	Calcium selenate, see Selenates or Selenites.												
	Calcium silicide	4.3	UN1405	II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	B	52, 85, 103
	Camphor oil	3	UN1130	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	B	52, 85, 103
	Camphor, synthetic	4.1	UN2717	III	4.1	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	103
	Carboron primers, see Primers, tubular					A1, IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	A	103
	Caproic acid	8	UN2829	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	103

.....	3	UN2758	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
.....	6.1	UN2992	II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
.....	6.1	UN2991	III	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
.....	6.1	UN2991	I	6.1, 3	IB2, T11, TP2, TP13, TP27	153	203	241	5 L	60 L	B	40
.....	6.1	UN2757	II	6.1, 3	IB3, T7, TP2, TP28	153	201	243	60 L	220 L	A	40
.....	6.1	UN2757	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
.....	6.1	UN2757	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
.....	6.1	UN2757	III	6.1	IB7, IP1, T6, TP33	153	202	243	60 L	220 L	A	40
.....	6.1	UN2757	I	6.1	IB8, IP2, IP4, T3, TP33	153	201	243	5 kg	50 kg	A	40
.....	6.1	UN2757	II	6.1	IB8, IP3, T1, TP33	153	212	242	25 kg	100 kg	A	40
.....	6.1	UN2757	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
.....	4.2	UN1362	III	4.2	IB8, IP3, T1, TP33	None	213	241	.....	.....	.....	.....
.....	4.2	UN1361	II	4.2	IB6, T3, TP33	None	212	242	0.5 kg	0.5 kg	A	12
.....	4.2	UN1361	III	4.2	IB8, IP3, T1, TP33	None	213	241	Forbidden	Forbidden	A	12
.....	2.2	UN1013	.....	2.2	.....	306	302, 304	302, 304, 314, 315	75 kg	150 kg	A	.....
.....	2.2	UN2187	.....	2.2	T75, TP5	306	304	314, 315	50 kg	500 kg	B	.....
.....	9	UN1845	III	None	.....	217	217	240	200 kg	200 kg	C	40
.....	3	UN1131	I	3, 6.1	B16, T14, TP2, TP7, TP13	None	201	243	Forbidden	Forbidden	D	18, 40, 115
.....	2.3	UN1016	.....	2.3	.....	None	302	314, 315	Forbidden	25 kg	D	40
.....	2.3	NA9202	.....	2.3	4, T75, TP5	None	316	318	Forbidden	Forbidden	D	.....
.....	6.1	UN2516	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	25
.....	6.1	UN1846	II	6.1	IB2, N36, T7, TP2	153	202	243	5 L	60 L	A	40
.....	2.3	UN2417	.....	2.3, 8	.....	None	302	None	Forbidden	Forbidden	D	40
.....	2.3	UN2204	.....	2.3	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
.....

Caps, blasting, see Detonators, etc.
 Carbamate pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.
 Carbamate pesticides, liquid, toxic
 Carbamate pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.
 Carbamate pesticides, solid, toxic
 Carbolic acid, see Phenol, solid or Phenol, molten
 Carbolic acid solutions, see Phenol solutions.
 Carbon, activated
 Carbon, animal or vegetable origin
 Carbon bisulfide, see Carbon disulfide.
 Carbon dioxide
 Carbon dioxide, refrigerated liquid
 Carbon dioxide, solid or Dry ice
 Carbon disulfide
 Carbon monoxide, compressed
 Carbon monoxide, refrigerated liquid (cryogenic liquid)
 Carbon tetrabromide
 Carbon tetrachloride
 Carbonyl chloride, see Phosgene
 Carbonyl fluoride
 Carbonyl sulfide
 Cartridge cases, empty, primed, see Cases, cartridge, empty, with primer.

A W

D

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
(1)	Cartridges, actuating, for aircraft ejector seat catapult, fire extinguisher, canopy removal or apparatus, see Cartridges, power device.												
	Cartridges, explosive, see Charges, demolition.												
	Cartridges, sporting, see Cartridges for weapons, inert projectile, or Cartridges, small arms.												
	Cartridges, flash	1.1G	UN0049	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Cartridges, flash	1.3G	UN0050	III	1.3G		None	62	None	Forbidden	75 kg	07	
	Cartridges for weapons, blank	1.1C	UN0326	III	1.1C		None	62	None	Forbidden	Forbidden	07	
	Cartridges for weapons, blank	1.2C	UN0413	III	1.2C		None	62	None	Forbidden	Forbidden	07	
	Cartridges for weapons, blank or Cartridges, small arms, blank.	1.4S	UN0014	III	None		63	62	None	25 kg	100 kg	05	
	Cartridges for weapons, blank or Cartridges, small arms, blank.	1.3C	UN0327	III	1.3C		None	62	None	Forbidden	Forbidden	07	
	Cartridges for weapons, blank or Cartridges, small arms, blank.	1.4C	UN0338	III	1.4C		None	62	None	Forbidden	75 kg	06	
	Cartridges for weapons, blank.	1.2C	UN0328	III	1.2C		None	62	62	Forbidden	Forbidden	03	
	Cartridges for weapons, inert projectile.						63	62	None	25 kg	100 kg	05	
	Cartridges for weapons, inert projectile or Cartridges, small arms.	1.4S	UN0012	III	None		None	62	None	Forbidden	75 kg	06	
	Cartridges for weapons, inert projectile or Cartridges, small arms.	1.4C	UN0339	III	1.4C		None	62	None	Forbidden	75 kg	06	
	Cartridges for weapons, inert projectile or Cartridges, small arms.	1.3C	UN0417	III	1.3C		None	62	None	Forbidden	Forbidden	06	
	Cartridges for weapons, with bursting charge.	1.1F	UN0005	III	1.1F		None	62	None	Forbidden	Forbidden	08	
	Cartridges for weapons, with bursting charge.	1.1E	UN0006	III	1.1E		None	62	62	Forbidden	Forbidden	03	
	Cartridges for weapons, with bursting charge.	1.2F	UN0007	III	1.2F		None	62	None	Forbidden	Forbidden	08	
	Cartridges for weapons, with bursting charge.	1.2E	UN0321	III	1.2E		None	62	62	Forbidden	Forbidden	03	
	Cartridges for weapons, with bursting charge.	1.4F	UN0348	III	1.4F		None	62	None	Forbidden	Forbidden	08	

UN	Description	UN	Class	Label	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity
UN0412	Cartridges for weapons, with bursting charge.	1.4E	II	1.4E	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0277	Cartridges, oil well	1.3C	II	1.3C	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0278	Cartridges, oil well	1.4C	II	1.4C	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0275	Cartridges, power device	1.3C	II	1.3C	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0276	Cartridges, power device	1.4C	II	1.4C	110	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0323	Cartridges, power device	1.4S	II	1.4S	63	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0381	Cartridges, power device	1.2C	II	1.2C	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0054	Cartridges, safety, blank, see Cartridges for weapons, blank (UN 0014).																				
UN0054	Cartridges, safety, see Cartridges for weapons, inert projectile, or Cartridges, small arms or Cartridges, power device (UN 0323).																				
UN0312	Cartridges, signal	1.3G	II	1.3G	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0405	Cartridges, signal	1.4G	II	1.4G	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
ORM-D	Cartridges, small arms	1.4S	II	1.4S	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
ORM-D	Cartridges, power device (used to project fastening devices).																				
UN0055	Cartridges, signal	1.3G	II	1.3G	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0379	Cartridges, signal	1.4G	II	1.4G	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0446	Cartridges, small arms	ORM-D	II	None	63	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
UN0447	Cartridges, small arms	ORM-D	II	None	63	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
UN0055	Cases, cartridge, empty with primer	1.4S	II	1.4S	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0379	Cases, cartridges, empty with primer	1.4C	II	1.4C	50	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0446	Cases, combustible, empty, without primer.	1.4C	II	1.4C	50	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN0447	Cases, combustible, empty, without primer.	1.3C	II	1.3C	None	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
UN2969	Casinghead gasoline see Gasoline	9	II	None	155	204	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
UN1719	Castor beans or Castor meal or Castor pomace or Castor flake.	8	II	8	154	202	242	242	242	242	242	242	242	242	242	242	242	242	242	242	242
UN1719	Caulic alkali liquids, n.o.s.	8	III	8	154	203	241	241	241	241	241	241	241	241	241	241	241	241	241	241	241
UN3292	Caulic potash, see Potassium hydroxide etc.	4.3	II	4.3	189	189	189	189	189	189	189	189	189	189	189	189	189	189	189	189	189
UN2000	Caulic soda, (etc.) see Sodium hydroxide etc.	4.1	III	4.1	None	213	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
UN2002	Cells, containing sodium	4.2	III	4.2	None	213	241	241	241	241	241	241	241	241	241	241	241	241	241	241	241
UN1333	Celluloid, in block, rods, rolls, sheets, tubes, etc., except scrap.	4.1	II	4.1	None	212	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
UN3078	Celluloid, scrap	4.3	II	4.3	151	212	242	242	242	242	242	242	242	242	242	242	242	242	242	242	242
UN1407	Cement, see Adhesives containing flammable liquid.	4.3	I	4.3	None	211	242	242	242	242	242	242	242	242	242	242	242	242	242	242	242
UN1333	Cerium, slabs, ingots, or rods	4.1	II	4.1	None	212	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
UN3078	Cerium, turnings or gritty powder	4.3	II	4.3	151	212	242	242	242	242	242	242	242	242	242	242	242	242	242	242	242
UN1407	Cesium or Caesium	4.3	I	4.3	None	211	242	242	242	242	242	242	242	242	242	242	242	242	242	242	242

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rai (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
D	Cesium nitrate or Caesium nitrate	5.1	UN1451	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Charcoal <i>briquettes</i> , shell, screenings, wood, etc.	4.2	NA1361	III	4.2	IB8, T1, TP33	151	213	240	25 kg	100 kg	A	12
	Charges, bursting, plastics bonded	1.1D	UN0457	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Charges, bursting, plastics bonded	1.2D	UN0458	II	1.2D		None	62	None	Forbidden	Forbidden	07	
	Charges, bursting, plastics bonded	1.4D	UN0459	II	1.4D		None	62	None	Forbidden	Forbidden	07	
	Charges, bursting, plastics bonded	1.4S	UN0460	II	1.4S		None	62	None	25 kg	100 kg	05	
	Charges, demolition	1.1D	UN0048	II	1.1D		None	62	62	Forbidden	Forbidden	03	
	Charges, depth	1.1D	UN0056	II	1.1D		None	62	62	Forbidden	Forbidden	03	
	Charges, expelling, explosive, for fire extinguishers, see Cartridges, power device.												
	Charges, explosive, commercial without detonator	1.1D	UN0442	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Charges, explosive, commercial without detonator	1.2D	UN0443	II	1.2D		None	62	None	Forbidden	Forbidden	07	
	Charges, explosive, commercial without detonator	1.4D	UN0444	II	1.4D		None	62	None	Forbidden	75 kg	06	
	Charges, explosive, commercial without detonator	1.4S	UN0445	II	1.4S		None	62	None	25 kg	100 kg	05	
	Charges, propelling	1.1C	UN0271	II	1.1C		None	62	None	Forbidden	Forbidden	07	
	Charges, propelling	1.3C	UN0272	II	1.3C		None	62	None	Forbidden	Forbidden	07	
Charges, propelling	1.2C	UN0415	II	1.2C		None	62	None	Forbidden	Forbidden	07		
Charges, propelling	1.4C	UN0491	II	1.4C		None	62	None	Forbidden	75 kg	06		
Charges, propelling, for cannon	1.3C	UN0242	II	1.3C		None	62	None	Forbidden	Forbidden	10		
Charges, propelling, for cannon	1.1C	UN0279	II	1.1C		None	62	None	Forbidden	Forbidden	10		
Charges, propelling, for cannon	1.2C	UN0414	II	1.2C		None	62	None	Forbidden	Forbidden	10		
Charges, shaped, flexible, linear	1.4D	UN0237	II	1.4D		None	62	None	Forbidden	75 kg	06		
Charges, shaped, flexible, linear	1.1D	UN0288	II	1.1D		None	62	None	Forbidden	Forbidden	07		
Charges, shaped, without detonator	1.1D	UN0059	II	1.1D		None	62	None	Forbidden	Forbidden	07		
Charges, shaped, without detonator	1.2D	UN0439	II	1.2D		None	62	None	Forbidden	Forbidden	07		
Charges, shaped, without detonator	1.4D	UN0440	II	1.4D		None	62	None	Forbidden	75 kg	06		
Charges, shaped, without detonator	1.4S	UN0441	II	1.4S		None	62	None	25 kg	100 kg	05		
Charges, supplementary explosive	1.1D	UN0060	II	1.1D		None	62	None	Forbidden	Forbidden	10		
Chemical kit	8	NA1760	II	8		154	161	None	1 L	30 L	B	40	
Chemical kits	9	UN3316	II	9		154	161	None	10 kg	10 kg	A	40	
Chloral, anhydrous, stabilized	6.1	UN2075	II	6.1		IB2, T7, TP2	153	202	243	5 L	60 L	D	

Chlorate and borate mixtures	5.1	UN1458	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	240	5 kg	25 kg A	56, 58
Chlorate and magnesium chloride mixture solid.	5.1	UN1459	III	5.1	A9, IB8, IP3, N34, T1, TP33	152	213	240	25 kg	100 kg A	56, 58
Chlorate and magnesium chloride mixture solution.	5.1	UN3407	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	240	5 kg	25 kg A	56, 58
Chlorate of potash, see Potassium chlorate.											
Chlorate of soda, see Sodium chlorate.											
Chlorates, inorganic, aqueous solution, n.o.s.	5.1	UN3210	II	5.1	IB2, T4, TP1	152	202	242	1 L	5 L B	56, 58, 133
Chlorates, inorganic, n.o.s.	5.1	UN1461	III	5.1	IB2, T4, TP1	152	203	241	2.5 L	30 L B	56, 58, 133
Chloric acid aqueous solution, with not more than 10 percent chloric acid.	5.1	UN2626	II	5.1	A9, IB6, IP2, N34, T3, TP33	152	212	242	5 kg	25 kg A	56, 58
Chloride of phosphorus, see Phosphorus trichloride											
Chloride of sulfur, see Sulfur chloride											
Chlorinated lime, see Calcium hypochlorite mixtures, etc.											
Chlorine	2.3	UN1017		2.3, 5.1, 8.	2, B9, B14, N86, T50, TP19	None	304	314, 315.	Forbidden	Forbidden D	40, 51, 55, 62, 68, 89, 90
Chlorine azide	Forbidden										
Chlorine dioxide, hydrate, frozen	5.1	NA9191	II	5.1, 6.1.		None	229	None	Forbidden	Forbidden E	
Chlorine dioxide (not hydrate)	Forbidden										
Chlorine pentafluoride	2.3	UN2548		2.3, 5.1, 8.	1, B7, B9, B14, N86	None	304	314	Forbidden	Forbidden D	40, 89, 90
Chlorine trifluoride	2.3	UN1749		2.3, 5.1, 8.	2, B7, B9, B14, N86	None	304	314	Forbidden	Forbidden D	40, 89, 90
Chlorite solution	8	UN1908	II	8	A3, A6, A7, B2, IB2, N34, T7, TP2, TP24	154	202	242	1 L	30 L B	26, 44, 89, 100, 141

D

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
				III	8	A3, A6, A7, B2, IB3, N34, T4, TP2, TP24	154	203	241	5 L	60 L	B	26, 44, 89, 100, 141, 56, 58
	Chlorites, inorganic, n.o.s.	5.1	UN1462	II	5.1	A7, IB6, IP2, N34, T3, TP33	152	212	242	5 kg	25 kg	A	
	1-Chloro-1,1-difluoroethane or Refrigerant gas R 142b.	2.1	UN2517		2.1	T50	306	304	314, 315	Forbidden	150 kg	B	40
	3-Chloro-4-methylphenyl isocyanate, liquid.	6.1	UN2236	II	6.1	IB2	153	202	243	5 L	60 L	B	40
	3-Chloro-4-methylphenyl isocyanate, solid.	6.1	UN3428	II	6.1	IB6, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
	1-Chloro-1,2,2,2-tetrafluoroethane or Refrigerant gas R 124.	2.2	UN1021		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	4-Chloro-o-toluidine hydrochloride, solid.	6.1	UN1579	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	4-Chloro-o-toluidine hydrochloride, solution.	6.1	UN3410	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	1-Chloro-2,2,2-trifluoroethane or Refrigerant gas R 133a.	2.2	UN1983		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Chloroacetic acid, molten	6.1	UN3250	II	6.1, 8	IB1, T7, TP3, TP28	None	202	243	Forbidden	Forbidden	C	40
	Chloroacetic acid, solid	6.1	UN1751	II	6.1, 8	A3, A7, IB8, IP2, IP4, N34, T3, TP33	153	212	242	15 kg	50 kg	C	40
	Chloroacetic acid, solution	6.1	UN1750	II	6.1, 8	A7, IB2, N34, T7, TP2	153	202	243	243	30 L	C	40
	Chloroacetone, stabilized	6.1	UN1695	I	6.1, 3, 8	2, B9, B14, B32, N12, N32, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	21, 40, 100
+	Chloroacetone (unstabilized)	Forbidden											
	Chloroacetonitrile	6.1	UN2668	II	6.1, 3	2, B9, B14, B32, IB9, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 40, 52
	Chloroacetophenone, liquid, (CM)	6.1	UN3416	II	6.1	A3, IB2, N12, N32, N33, T7, TP2, TP13	None	202	243	Forbidden	60 L	D	12, 40
	Chloroacetophenone, solid, (CV)	6.1	UN1697	II	6.1	A3, IB8, IP2, IP4, N12, N32, N33, N34, T3, TP2, TP13, TP33	None	212	None	Forbidden	100 kg	D	12, 40
	Chloroacetyl chloride	6.1	UN1752	I	6.1, 8	2, B3, B6, B9, B14, B32, B77, N34, N43, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40

Chloroanilines, liquid	6.1	UN2019	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	52
Chloroanilines, solid	6.1	UN2018	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	
Chloroanisidines	6.1	UN2233	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	
Chlorobenzene	3	UN1134	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	
Chlorobenzol, see Chlorobenzene											40
Chlorobenzotrifluorides	3	UN2234	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	
Chlorobenzyl chlorides, liquid	6.1	UN2235	III	6.1	IB3, T4, TP1	153	203	241	60 L	200 kg	
Chlorobenzyl chlorides, solid	6.1	UN3427	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	
Chlorobutanes	3	UN1127	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	
Chlorocresols solution	6.1	UN2669	III	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	12
Chlorocresols, solid	6.1	UN3437	III	6.1	IB3, T7, TP2	153	203	241	60 L	220 L	12
Chlorodifluoromethane or Refrigerant gas R 12B1.	2.2	UN1974	II	2.2	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	12
Chlorodifluoromethane and chloropentafluoroethane mixture or Refrigerant gas R 502 with fixed boiling point, with approximately 49 percent chlorodifluoromethane	2.2	UN1973	II	2.2	T50	306	304	314, 315.	75 kg	150 kg	
Chlorodifluoromethane or Refrigerant gas R 22.	2.2	UN1018	II	2.2	T50	306	304	314, 315.	75 kg	150 kg	
Chlorodinitrobenzenes, liquid.	6.1	UN1577	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	91
Chlorodinitrobenzenes, solid	6.1	UN3441	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	91
2-Chloroethanal	6.1	UN2232	I	6.1	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	40
Chloroform	6.1	UN1888	III	6.1	IB3, N36, T7, TP2	153	203	241	60 L	220 L	40
Chloroformates, toxic, corrosive, flammable, n.o.s.	6.1	UN2742	II	6.1, 8, 3.	5, IB1, T7, TP2	153	202	243	1 L	30 L	12, 13, 21, 25, 40, 100
Chloroformates, toxic, corrosive, n.o.s.	6.1	UN3277	II	6.1, 8	IB2, T8, TP2, TP13	153	202	243	1 L	30 L	12, 13, 25, 40
Chloromethyl chloroformate	6.1	UN2745	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	12, 13, 21, 25, 40, 100
Chloromethyl ethyl ether	3	UN2354	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	40
Chloronitroanilines	6.1	UN2237	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	
Chloronitrobenzenes, liquid	6.1	UN3409	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	
Chloronitrobenzenes, solid	6.1	UN1578	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	
Chloronitrotoluenes, liquid	6.1	UN2433	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	44, 89, 100, 141
Chloronitrotoluenes, solid	6.1	UN3457	III	6.1	IB8, IP3, T1, TP33	153	213	240	25 kg	200 kg	
Chloropentafluoroethane or Refrigerant gas R 115.	2.2	UN1020	II	2.2	T50	306	304	314, 315.	75 kg	150 kg	
Chlorophenolates, liquid or Phenolates, liquid	8	UN2904	III	8	IB3	154	203	241	5 L	60 L	
Chlorophenolates, solid or Phenolates, solid	8	UN2905	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	
Chlorophenols, liquid	6.1	UN2021	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	
Chlorophenols, solid	6.1	UN2020	III	6.1	IB8, IP3, T1, TP1, TP33	153	213	240	100 kg	200 kg	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Chlorophenyltrichlorosilane	8	UN1753	II	8	A7, B2, B6, N34, T10, TP2, TP7	None	206	242	Forbidden	30 L	C	40
+	Chloropicrin	6.1	UN1580	I	6.1	2, B7, B9, B14, B32, B46, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Chloropicrin and methyl bromide mix-tures.	2.3	UN1581	.....	2.3	2, B9, B14, N86, T50	None	193	314, 315	Forbidden	Forbidden	D	25, 40
	Chloropicrin and methyl chloride mix-tures.	2.3	UN1582	.....	2.3	2, N86, T50	None	193	245	Forbidden	Forbidden	D	25, 40
	Chloropicrin mixture, flammable (pressure not exceeding 14.7 psia at 115 degrees F flash point below 100 degrees F) see Toxic liquids, flammable, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Chloropicrin mixtures, n.o.s.	6.1	UN1583	I	6.1	5	None	201	243	Forbidden	Forbidden	C	40
	.....	.....	.....	.....	6.1	IB2	153	202	243	Forbidden	Forbidden	C	40
	.....	.....	.....	.....	6.1	IB3	153	203	241	Forbidden	Forbidden	C	40
D	Chloroethylalyl chloride	6.1	NA8263	I	6.1, 8	2, B9, B14, B32, T20, TP4, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40
	.....	.....	.....	.....	.....	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
	Chloroethylnic acid, solid	8	UN2507	III	8	B57, T14, TP2, TP13	None	201	243	Forbidden	30 L	D	40
	Chloroethylnic acid, stabilized	3	UN1991	I	3, 6.1	.....	.....	.....	.....	.....	.....	.....	.....
	Chloroethylnic acid, uninhibited	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1-Chloropropane	3	UN1278	II	3	IB2, IP8, N34, T7, TP2	None	202	242	Forbidden	60 L	E	.....
	2-Chloropropane	3	UN2356	I	3	N36, T11, TP2, TP13	None	201	243	Forbidden	30 L	E	.....
	3-Chloropropanol-1	6.1	UN2849	III	6.1	IB3, T4, TP1	150	203	241	60 L	220 L	A	.....
	2-Chloropropene	3	UN2456	I	3	A3, N36, T11, TP2	150	201	243	1 L	30 L	E	.....
	2-Chloropropionic acid	8	UN2511	III	8	IB3, T4, TP2	154	203	241	1 L	60 L	A	8
	2-Chloropyridine	6.1	UN2822	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Chlorosilanes, corrosive, flammable, n.o.s.	8	UN2986	II	8, 3	T14, TP2, TP7, TP13, TP27	None	206	243	1 L	30 L	C	40
	Chlorosilanes, corrosive, n.o.s.	8	UN2987	II	8	B2, T14, TP2, TP7, TP13, TP27	None	206	242	1 L	30 L	C	40
	Chlorosilanes, flammable, corrosive, n.o.s.	3	UN2985	II	3, 8	T14, TP2, TP7, TP13, TP27	None	206	243	1 L	5 L	B	40
	Chlorosilanes, toxic, corrosive, flammable, n.o.s.	6.1	UN3362	II	6.1, 3, 8	T14, TP2, TP7, TP13, TP27	None	206	243	1 L	30 L	C	40, 125
	Chlorosilanes, toxic, corrosive, n.o.s	6.1	UN3361	II	6.1, 8	T14, TP2, TP7, TP13, TP27	None	206	243	1 L	30 L	C	40

Chlorosilanes, water-reactive, flammable, corrosive, n.o.s.	4.3	UN2988	I	4.3, 3, 8.	A2, T14, TP2, TP7, TP13	None	201	244	Forbidden	1 L	D	21, 28, 40, 49, 100					
Chlorosulfonic acid (with or without sulfur trioxide)	8	UN1754	I	8, 6.1	2, B9, B10, B14, B32, T20, TP2, TP38, TP45	None	227	244	Forbidden	C		40					
Chlorotoluenes	3	UN2238	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A						
Chlorotoluidines, liquid	6.1	UN3429	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A						
Chlorotoluidines, solid	6.1	UN2239	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A						
Chlorotrifluoromethane and trifluoromethane azeotropic mixture or Refrigerant gas R 503 with approximately 60 percent chlorotrifluoromethane.	2.2	UN2599		2.2		306	304	314, 315.	75 kg	150 kg	A						
Chlorotrifluoromethane or Refrigerant gas R 13.	2.2	UN1022		2.2	B2, IB2, T8, TP2	306	304	314, 315.	75 kg	150 kg	A						
Chromic acid solution	8	UN1755	II	8		154	202	242	1 L	30 L	C	40, 44, 89, 100, 141					
			III	8	IB3, T4, TP1	154	203	241	5 L	60 L	C	40, 44, 89, 100, 141					
Chromic anhydride, see Chromium trioxide, anhydrous.																	
Chromic fluoride, solid	8	UN1756	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52					
Chromic fluoride, solution	8	UN1757	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A						
			III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A						
Chromium nitrate	5.1	UN2720	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A						
Chromium oxychloride	8	UN1758	I	8	A3, A6, A7, B10, N34, T10, TP2	None	201	243	0.5 L	2.5 L	C	40, 66, 74, 89, 90					
Chromium trioxide, anhydrous	5.1	UN1463	II	5.1, 6.1, 8.	IB8, IP2, IP4, T3, TP33	None	212	242	5 kg	25 kg	A	66, 90					
Chromosulfuric acid	8	UN2240	I	8	A3, A6, A7, B4, B6, N34, T10, TP2, TP13	None	201	243	0.5L	2.5L	B	40, 66, 74, 89, 90					
Chromyl chloride, see Chromium oxychloride.																	
Cigar and cigarette lighters, charged with fuel, see Lighters or Lighter refills containing flammable gas.																	
Coal briquettes, hot	Forbidden								Forbidden	Forbidden	D	40					
Coal gas, compressed	2.3	UN1023		2.3	3	None	302	314, 315.	Forbidden	Forbidden	D						
Coal tar distillates, flammable	3	UN1136	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B						
			III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A						

+

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
	Coal tar dye, corrosive, liquid, n.o.s., see Dyes, liquid or solid, n.o.s. or Dye intermediates, liquid or solid, corrosive, n.o.s. Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining).	3	UN1139	I	3	T11, TP1, TP8, TP27	150	201	243	1 L	30 L	E	
	Cobalt naphthenates, powder	4.1	UN2001	III	3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
	Cobalt resinate, precipitated	4.1	UN1318	III	4.1	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Coke, hot	Forbidden		III	4.1	A19, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	
	Collision, see Nitrocellulose etc			III		A1, A19, IB6, T1, TP33		213	240	25 kg	100 kg	A	
D	Combustible liquid, n.o.s.	Comb liq	NA1993	III	None	IB3, T1, T4, TP1	150	203	241	60 L	220 L	A	
G	Components, explosive train, n.o.s	1.2B	UN0382	II	1.2B		None	62	None	Forbidden	Forbidden	11	
G	Components, explosive train, n.o.s	1.4B	UN0383	II	1.4B		None	62	None	Forbidden	75 kg	06	
G	Components, explosive train, n.o.s	1.4S	UN0384	II	1.4S		None	62	None	Forbidden	100 kg	05	
G	Components, explosive train, n.o.s	1.1B	UN0461	II	1.1B		None	62	None	Forbidden	Forbidden	11	
D	Composiflon B, see Hexolite, etc			I	8	A7, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40
D	Compounds, cleaning liquid	8	NA1760	II	8	B2, IB2, N37, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
D	Compounds, cleaning liquid	3	NA1993	III	8	IB3, N37, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
D	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	8	NA1760	I	8	IB2, T7, TP1, TP8, TP28	150	201	243	1 L	30 L	E	
D	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	8	NA1760	I	8	B1, B52, IB3, T4, TP1, TP29	150	202	242	5 L	60 L	B	
D	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	8	NA1760	I	8	A7, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40
D	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	3	NA1993	III	8	B2, IB2, N37, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
D	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	3	NA1993	III	8	IB3, N37, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
D	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	3	NA1993	I	3	IB2, T7, TP1, TP8, TP28	150	201	243	1 L	30 L	E	
D	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	3	NA1993	III	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
D	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	3	NA1993	III	3	IB2, T7, TP1, TP8, TP28	150	201	243	1 L	30 L	E	
D	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	3	NA1993	III	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	

DOT Label	Description	UN Number	Class	Subclass	Provisions	Special Provisions	Quantity	Container	Other
D G	Compounds, tree killing, liquid or Compounds, weed killing, liquid.	6.1 NAA2810	III	3	B1, B52, IB3, T4, TP1, TP29, TP27	150	203	242	220 L A
G	Compressed gas, flammable, n.o.s.	2.1 UN1954	II	6.1	IB2, T11, TP2, TP27	153	202	243	30 L B
G	Compressed gas, n.o.s.	2.2 UN1956	III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L B
G	Compressed gas, oxidizing, n.o.s.	2.2 UN3156	.....	2.1	77	306	302	314	220 L A
G I	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone A.	2.3 UN3304	.....	2.2	A14	306	302	314	150 kg D
G I	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone B.	2.3 UN3304	.....	5.1	1	None	192	245	Forbidden D
G I	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone C.	2.3 UN3304	.....	2.3, 8	2, B9, B14	None	302	314	Forbidden D
G I	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone D.	2.3 UN3304	.....	2.3, 8	3, B14	None	302	314	Forbidden D
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone A.	2.3 UN3305	.....	2.3, 8	4	None	302	314	Forbidden D
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone B.	2.3 UN3305	.....	2.1, 2.3, 8	1	None	192	245	Forbidden D
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone C.	2.3 UN3305	.....	2.1, 2.3, 8	2, B9, B14	None	302	314	Forbidden D
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone D.	2.3 UN3305	.....	2.1, 2.3, 8	3, B14	None	302	314	Forbidden D
G	Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone A.	2.3 UN1953	.....	2.3	1	None	192	245	Forbidden D
G	Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone B.	2.3 UN1953	.....	2.3	2, B9, B14	None	302	314	Forbidden D
G	Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone C.	2.3 UN1953	.....	2.1	3, B14	None	302	314	Forbidden D
G	Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone D.	2.3 UN1953	.....	2.1	4	None	302	314	Forbidden D
G	Compressed gas, toxic, n.o.s. Inha- lition Hazard Zone A.	2.3 UN1955	.....	2.3	1	None	192	245	Forbidden D
G	Compressed gas, toxic, n.o.s. Inha- lition Hazard Zone B.	2.3 UN1955	.....	2.3	2, B9, B14	None	302	314	Forbidden D
G	Compressed gas, toxic, n.o.s. Inha- lition Hazard Zone C.	2.3 UN1955	.....	2.3	3, B14	None	302	314	Forbidden D
G	Compressed gas, toxic, n.o.s. Inha- lition Hazard Zone D.	2.3 UN1955	.....	2.3	4	None	302	314	Forbidden D

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone A.</i>	2.3	UN3306	.....	2.3, 5.1, 8	1	None ...	192 ...	244 ...	Forbidden	Forbidden	D	40, 89, 90
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone B.</i>	2.3	UN3306	.....	2.3, 5.1, 8	2, B9, B14	None ...	302, 305	314, 315	Forbidden	Forbidden	D	40, 89, 90
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone C.</i>	2.3	UN3306	.....	2.3, 5.1, 8	3, B14	None ...	302, 305	314, 315	Forbidden	Forbidden	D	40, 89, 90
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone D.</i>	2.3	UN3306	.....	2.3, 5.1, 8	4	None ...	302, 305	314, 315	Forbidden	Forbidden	D	40, 89, 90
G	Compressed gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone A.</i>	2.3	UN3303	.....	2.3, 5.1	1	None ...	192 ...	245 ...	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone B.</i>	2.3	UN3303	.....	2.3, 5.1	2, B9, B14	None ...	302, 305	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone C.</i>	2.3	UN3303	.....	2.3, 5.1	3, B14	None ...	302, 305	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone D.</i>	2.3	UN3303	.....	2.3, 5.1	4	None ...	302, 305	314, 315	Forbidden	Forbidden	D	40
D	Consumer commodity	ORM-D		.....	None		156, 306, None ...	156, 306, 62 ...	None	30 kg gross Forbidden	30 kg gross Forbidden	A 08	..... 8E, 14E, 15E, 17E
G	Contrivances, water-activated, with burster, expelling charge or propelling charge.	1.2L	UN0248	.....	1.2L ...		None ...	62 ...	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Contrivances, water-activated, with burster, expelling charge or propelling charge.	1.3L	UN0249	.....	1.3L ...		None ...	62 ...	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Copper acetoarsenite	6.1	UN1585	.....	6.1 ...		153	212 ...	242 ...	25 kg	100 kg	A	.....
	Copper acetylacetonate	Forbidden		.....	.....		.....	.....	.....	.....	.....	.....	.....
	Copper amine azide	Forbidden		.....	.....		.....	.....	.....	.....	.....	.....	.....
	Copper arsenite	6.1	UN1586	.....	6.1 ...		153	212 ...	242 ...	25 kg	100 kg	A	.....
	Copper based pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	UN2776	.....	1, 3, 6.1		None ...	201 ...	243 ...	Forbidden	Forbidden	A B	..... 40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
G	Corrosive liquid, basic, organic, n.o.s.	8	UN3267	III I	8 8	IB3, T7, TP1, TP28 A6, B10, T14, TP2, TP27	154 None	203 201	241 243	5 L 0.5 L	60 L 2.5 L	A B	40, 52 40, 52
G	Corrosive liquid, self-heating, n.o.s.	8	UN3301	III I	8 8, 4.2	B2, IB2, T11, TP2, TP27 IB3, T7, TP1, TP28 A6, B10 B2, IB1	154 None	202 201	241 243	1 L 0.5 L	30 L 2.5 L	B D	40, 52 40, 52
G	Corrosive liquids, flammable, n.o.s.	8	UN2920	I	8, 3	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	30 L 2.5 L	C D	25, 40
G	Corrosive liquids, n.o.s.	8	UN1760	II I	8, 3 8	B2, IB2, T11, TP2, TP27 A6, A7, B10, T14, TP2, TP27	None None	202 201	243 243	1 L 0.5 L	30 L 2.5 L	C B	25, 40 40
G	Corrosive liquids, oxidizing, n.o.s.	8	UN3093	III I	8 8, 5.1	B2, IB2, T11, TP2, TP27 IB3, T7, TP1, TP28 A6, A7	154 None	202 201	242 241	1 L 5 L	30 L 60 L	B A	40 40
G	Corrosive liquids, toxic, n.o.s.	8	UN2922	II I	8, 5.1 8, 6.1	A6, A7, IB2 A6, A7, B10, T14, TP2, TP13, TP27	None None	202 201	243 243	Forbidden 0.5 L	2.5 L 2.5 L	C B	89 40
G	Corrosive liquids, water-reactive, n.o.s.	8	UN3094	III I	8, 6.1 8, 6.1 8, 4.3	B3, IB2, T7, TP2 IB3, T7, TP1, TP28 A6, A7	154 None	202 201	243 241	1 L 5 L	30 L 60 L	B B	40 40
G	Corrosive solid, acidic, inorganic, n.o.s.	8	UN3260	II	8, 4.3	IB7, IP1, T6, TP33 A6, A7	None	202	243	1 L 1 kg	5 L 25 kg	E B	.....
G	Corrosive solid, acidic, organic, n.o.s.	8	UN3261	III I	8 8	IB8, IP2, IP4, T3, TP33 IB8, IP3, T1, TP33 IB7, IP1, T6, TP33	154 None	212 211	240 240	15 kg 25 kg	50 kg 100 kg	B A	.....
G	Corrosive solid, basic, inorganic, n.o.s.	8	UN3262	III I	8 8	IB8, IP2, IP4, T3, TP33 IB8, IP3, T1, TP33 IB7, IP1, T6, TP33	154 None	211 211	240 240	15 kg 25 kg	100 kg 25 kg	A B	52 52
G	Corrosive solid, basic, organic, n.o.s.	8	UN3263	III I	8 8	IB8, IP2, IP4, T3, TP33 IB8, IP3, T1, TP33 IB6, T6, TP33	154 None	211 211	240 242	15 kg 25 kg	100 kg 25 kg	B A	52 52
G	Corrosive solids, flammable, n.o.s.	8	UN2921	III I	8, 4.1	IB8, IP2, IP4, T3, TP33 IB8, IP3, T1, TP33 IB6, T6, TP33	154 None	211 211	240 242	1 kg 1 kg	100 kg 25 kg	A B	12, 25

Category	Description	HAZARDOUS MATERIALS	Quantity	Labeling	PL	Special Provisions	Quantity	Labeling	PL	Special Provisions	
G	Corrosive solids, n.o.s.	UN1759	8	II 8, 4.1	IB8, IP2, IP4, T3, TP33	None	212	242	15 kg	50 kg B	12, 25
				I 8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg B	
G	Corrosive solids, oxidizing, n.o.s.	UN3084	8	III 8, 5.1	128, IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg A	
				II 8	128, IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg A	
G	Corrosive solids, self-heating, n.o.s.	UN3095	8	II 8, 5.1	IB6, IP2, T3, TP33	None	211	242	1 kg	25 kg C	
				II 8, 4.2	IB6, IP2, T3, TP33	None	212	242	1 kg	50 kg C	
G	Corrosive solids, toxic, n.o.s.	UN2923	8	II 8, 4.2	IB6, IP2, T3, TP33	None	211	243	1 kg	50 kg C	
				II 8, 6.1	IB7, T6, TP33	None	212	242	15 kg	50 kg C	
G	Corrosive solids, water-reactive, n.o.s.	UN3096	8	II 8, 6.1	IB8, IP2, IP4, T3, TP33	154	211	240	1 kg	25 kg B	40
				III 8, 6.1	IB8, IP3, T1, TP33	154	212	240	15 kg	50 kg B	40
D W	Cotton	NA1365	9	II 8, 4.3	IB4, IP1, T6, TP33	None	211	243	25 kg	100 kg B	40, 95
		UN1364	4.2	III 9	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg D	
A I W	Cotton waste, oily	UN1365	4.2	III 4.2	137, IB8, IP2, IP4, W41	None	None	None	No limit	No limit	
				III 4.2	IB8, IP3, IP7	None	213	None	Forbidden	Forbidden	A
W	Coumarin derivative pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	UN3024	3	I 3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L B	40
				II 3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L B	40
W	Coumarin derivative pesticides, liquid, toxic.	UN3026	6.1	I 6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L B	40
				III 6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L B	40
W	Coumarin derivative pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	UN3025	6.1	I 6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L B	40
				II 6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L B	40
W	Coumarin derivative pesticides, solid, toxic.	UN3027	6.1	III 6.1, 3	B1, IB3, T7, TP1, TP28	153	203	242	60 L	220 L A	40
				I 6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg A	40
W	Cresols, liquid	UN2076	6.1	II 6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg A	40
				III 6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg A	40
W	Cresols, solid	UN3455	6.1	II 6.1, 8	IB2, IP2, IP4, T7, TP2	153	202	243	1 L	30 L B	40
				II 6.1, 8	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg B	40
W	Cresylic acid	UN2022	6.1	II 6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L B	40
				I 6.1, 3	2, 175, B8, B14, B32, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B
W	Crotonaldehyde or Crotonaldehyde, stabilized.	UN1143	6.1	I 6.1, 3	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg A	40
				III 8	IB8, IP3, T1, TP33	154	203	241	5 L	60 L A	12
W	Crotonic acid, liquid	UN3472	8	III 8	IB8, IP3, T1, TP33	154	203	241	25 kg	100 kg A	12
				III 8	IB8, IP3, T1, TP33	154	213	240	1 L	30 L E	
W	Crotonic acid, solid	UN2823	8	III 8	T11, TP2	150	201	243	1 L	30 L A	
				III 8, 6.1	IB2, T7, TP2	154	202	243	1 L	30 L A	
W	Cupriethylenediamine solution	UN1761	8	III 8, 6.1	IB3, T7, TP1, TP28	154	203	242	5 L	60 L A	95
				III 1.4S	None	None	62	62	25 kg	100 kg	05

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Cyanide or cyanide mixtures, dry, see Cyanides, inorganic, solid, n.o.s.												
	Cyanide solutions, n.o.s.	6.1	UN1935	I	6.1	B37, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40, 52
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	A	40, 52
				III	6.1	IB3, T7, TP2, TP13, TP28	153	203	241	60 L	220 L	A	40, 52
	Cyanides, inorganic, solid, n.o.s.	6.1	UN1588	I	6.1	IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	A	52
				II	6.1	IB8, IP2, IP4, N74, N75, T3, TP33	153	212	242	25 kg	100 kg	A	52
				III	6.1	IB8, IP3, N74, N75, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Cyanogen	2.3	UN1026		2.3, 2.1	2	None	304	245	Forbidden	Forbidden	D	40
	Cyanogen bromide	6.1	UN1889	I	6.1, 8	A6, A8, T6, TP33	None	211	242	1 kg	15 kg	D	40
	Cyanogen chloride, stabilized	2.3	UN1589		2.3, 8	1	None	192	245	Forbidden	Forbidden	D	40
	Cyanuric chloride	8	UN2670	II	8	IB8, IP2, IP4, T3, TP33	None	212	240	15 kg	50 kg	A	12, 40
	Cyanuric triazide	Forbidden											
	Cyclobutane	2.1	UN2601		2.1		306	304	314, 315	Forbidden	150 kg	B	40
	Cyclobutyl chloroformate	6.1	UN2744	II	6.1, 8, 3	IB1, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
	1,5,9-Cyclododecatriene	6.1	UN2518	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40
	Cycloheptane	3	UN2241	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Cycloheptatriene	3	UN2603	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Cycloheptene	3	UN2242	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Cyclohexane	3	UN1145	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Cyclohexanone	3	UN1915	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Cyclohexene	3	UN2256	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Cyclohexenyltrichlorosilane	8	UN1762	II	8	A7, B2, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	30 L	C	40
	Cyclohexyl acetate	3	UN2243	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

	6.1	UN2488	I	6.1, 3	2, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Cyclohexyl isocyanate				6.1, 3								
Cyclohexyl mercaptan	3	UN3054	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40, 95
Cyclohexylamine	8	UN2357	II	8, 3	IB2, T7, TP2	None	202	243	1 L	30 L	A	40
Cyclohexyltrichlorosilane	8	UN1763	II	8	A7, B2, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	30 L	C	40
Cyclonite and cyclotetramethylenetetranitramine mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
Cyclonite and HMX mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
Cyclonite and octogen mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
Cyclonite												
Cyclotrimethylenetrinitramine, see Phosphabicyclononanes.												
Cyclooctadiene phosphines, see 9-Phosphabicyclononanes.												
Cyclooctatetraene	3	UN2520	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclopentane	3	UN2358	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Cyclopentane, methyl, see Methylcyclopentane.												
Cyclopentanol	3	UN2244	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclopentanone	3	UN2245	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclopentene	3	UN2246	II	3	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	
Cyclopropane	2.1	UN1027		2.1	T50	306	304	314, 315	Forbidden	150 kg	E	40
Cycloletramethylene tetranitramine (dry or unphlegmatized) (HMX).	Forbidden											
Cyclotetramethylenetetranitramine, desensitized or Octogen, desensitized or HMX, desensitized.	1.1D	UN0484	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cycloletramethylenetetranitramine, wetted or HMX, wetted or Octogen, wetted with not less than 15 percent water, by mass.	1.1D	UN0226	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cyclotrimethylenetrinitramine and octogen, mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized, etc.												

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)		(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Cyclotrimethylenetrinitramine and cyclo-tetramethylenetrinitramine mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.											
	Cyclotrimethylenetrinitramine and HMX mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.											
	Cyclotrimethylenetrinitramine, desensitized or Cyclonite, desensitized or Hexogen, desensitized or RDX, desensitized.	1.1D	UN0483	II	1.1D ..		None ..	62	None	Forbidden	Forbidden	10
	Cyclotrimethylenetrinitramine, wetted or Cyclonite, wetted or Hexogen, wetted or RDX, wetted with not less than 15 percent water by mass.	1.1D	UN0072	II	1.1D ..		None ..	62	None	Forbidden	Forbidden	10
	Cymenes	3	UN2046	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A
	Dangerous Goods in Machinery or Dangerous Goods in Apparatus.	9	UN3363			136, A105	None	222	None	See A105	See A105	A
	Decaborane	4.1	UN1868	II	4.1, 6.1.	A19, A20, IB6, IP2, T3, TP33	None ..	212	None	Forbidden	50 kg	A
	Decahydronaphthalene	3	UN1147	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A
	n-Decane	3	UN2247	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A
	Deflagrating metal salts of aromatic nitroderivatives, n.o.s.	1.3C	UN0132	II	1.3C ..		None ..	62	None	Forbidden	Forbidden	10
	Delay electric igniter, see Igniters											
D	Denatured alcohol	3	NA1987	III	3	172, T8	150	202	242	5 L	60 L	B
	Depth charges, see Charges, depth					172, B1, T7	150	203	242	60 L	220 L	A
G	Desensitized explosive, liquid, n.o.s.	3	UN3379	I	3	164	None ..	211	None	Forbidden	Forbidden	D
G	Desensitized explosive, solid, n.o.s.	4.1	UN3380	I	4.1	164	None ..	211	None	Forbidden	Forbidden	D
	Detonating relays, see Detonators, etc.											
	Detonator assemblies, non-electric for blasting	1.1B	UN0360	II	1.1B ..		None ..	62	None	Forbidden	Forbidden	11

Detonator assemblies, non-electric, for blasting.	1.4B	UN0361	II	1.4B ...	103	63(f), 63(g).	62	None	Forbidden	75 kg	06	.....
Detonator assemblies, non-electric for blasting.	1.4S	UN0500	II	1.4S ...		63(f), 63(g).	62	None	25 kg	100 kg	05	.....
Detonators, electric, for blasting	1.1B	UN0030	II	1.1B ...		63(f), 63(g).	62	None	Forbidden	Forbidden	11	.....
Detonators, electric, for blasting	1.4B	UN0255	II	1.4B ...	103	63(f), 63(g).	62	None	Forbidden	75 kg	06	.....
Detonators, electric for blasting	1.4S	UN0456	II	1.4S ...		63(f), 63(g).	62	None	25 kg	100 kg	05	.....
Detonators for ammunition	1.1B	UN0073	II	1.1B ...		None	62	None	Forbidden	Forbidden	11	.....
Detonators for ammunition	1.2B	UN0364	II	1.2B ...		None	62	None	Forbidden	Forbidden	11	.....
Detonators for ammunition	1.4B	UN0365	II	1.4B ...	103	None	62	None	Forbidden	75 kg	06	.....
Detonators for ammunition	1.4S	UN0366	II	1.4S ...		None	62	None	25 kg	100 kg	05	.....
Detonators, non-electric, for blasting	1.1B	UN0029	II	1.1B ...		None	62	None	Forbidden	Forbidden	11	.....
Detonators, non-electric, for blasting	1.4B	UN0267	II	1.4B ...	103	63(f), 63(g).	62	None	Forbidden	75 kg	06	.....
Detonators, non-electric, for blasting	1.4S	UN0455	II	1.4S ...		63(f), 63(g).	62	None	25 kg	100 kg	05	.....
Deutrium, compressed	2.1	UN1957	.....	2.1	N89	306	302	None	Forbidden	150 kg	E	40
Devices, small, hydrocarbon gas powered or Hydrocarbon gas refills for small devices with release device.	2.1	UN3150	.....	2.1		306	304	None	1 kg	15 kg	B	40
Di-n-amyamine	3	UN2841	III	3, 6.1	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	.....
Di-n-butyl peroxydicarbonate, with more than 52 percent in solution.	Forbidden											.....
Di-n-butylamine	8	UN2248	II	8, 3	IB2, T7, TP2	None	202	243	1 L	30 L	A	.....
2,2-Di-(tert-butylperoxy) butane, with more than 55 percent in solution.	Forbidden											.....
Di-(tert-butylperoxy) phthalate, with more than 55 percent in solution.	Forbidden											.....
2,2-Di-(4,4-di-tert-butylperoxy)cyclohexyl propane, with more than 42 percent with inert solid.	Forbidden											.....
Di-2,4-dichlorobenzoyl peroxide, with more than 75 percent with water.	Forbidden											.....
1,2-Di-(dimethylamino)ethane	3	UN2372	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
Di-2-ethylhexyl phosphoric acid, see Diisooctyl acid phosphate.												.....
Di-(1-hydroxytetrazole) (dry)	Forbidden											.....
Di-(1-naphthyl) peroxide	Forbidden											.....
a,β-Di-(nitroxy) methyl ether	Forbidden											.....
Di-(beta-nitroxyethyl) ammonium nitrate.	Forbidden											.....
Diacetone alcohol	3	UN1148	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
			III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
	Diacetone alcohol peroxides, with more than 57 percent in solution with more than 9 percent hydrogen peroxide, less than 26 percent diacetone alcohol and less than 9 percent water; total active oxygen content more than 9 percent by mass.	Forbidden											
	Diacetyl, see Butanedione	Forbidden											
	Diacetyl peroxide, solid, or with more than 25 percent in solution.	Forbidden											
	Diallylamine	3	UN2359	II	3, 6.1, 8.	IB2, T7, TP1	150	202	243	1 L	5 L	B	21, 40, 100
	Diallylether	3	UN2360	III	3, 6.1	IB2, N12, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	4,4'-Diaminodiphenyl methane	6.1	UN2651	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	p-Diazobenzene	Forbidden											
	1,2-Diazidoethane	Forbidden											
	1,1'-Diazaminonaphthalene	Forbidden											
	Diazaminotetrazole (dry)	Forbidden											
	Diazodinitrophenol (dry)	1.1A	UN0074	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Diazodinitrophenol, wetted with not less than 40 percent water or mixture of alcohol and water, by mass.	Forbidden											
	Diazodiphenylmethane	Forbidden											
	Diazonium nitrates (dry)	Forbidden											
	Diazonium perchlorates (dry)	Forbidden											
	1,3-Diazopropane	Forbidden											
	Dibenzyl peroxycarbonate, with more than 87 percent with water.	Forbidden											
	Dibenzylchlorosilane	8	UN2434	II	8	B2, T10, TP2, TP7, TP13	154	206	242	1 L	30 L	C	40
	Diboreane	2.3	UN1911		2.3, 2.1	1, N89	None	302	None	Forbidden	Forbidden	D	40, 57
D	Diborane mixtures	2.1	NA1911		2.1	5	None	302	245	Forbidden	Forbidden	D	40, 57
	Dibromoacetylene	6.1	UN2648	II	6.1	IB2	153	202	243	5 L	60 L	B	40
	1,2-Dibromobutan-3-one	6.1	UN2872	III	6.1	IB3, T4, TP1	153	203	241	5 L	60 L	A	
	Dibromochloropropane	6.1		III	6.1		153	203	241	60 L	220 L	A	

UN Number	Proper Shipping Name	Class	Division	Subdivision	Special Provisions	Quantity	Label	Other
9 UN1941	Dibromodifluoromethane, R12B2	III	None	T11, TP2	155	203	241	100 L
6.1 UN2664	1,2-Dibromoethane, see Ethylene dibromide.	III	6.1	IB3, T4, TP1	153	203	241	220 L
3 UN1149	Dibromomethane	III	3	B1, IB3, T2, TP1	150	203	242	60 L
6.1 UN2873	Dibutylaminoethanol	III	6.1	IB3, T4, TP1	153	203	241	60 L
Forbidden	<i>N,N</i> -Dichloroazodicarbonamide (salts of dry).							
6.1 UN2650	1,1-Dichloro-1-nitroethane	II	6.1	IB2, T7, TP2	153	202	243	5 L
6.1 NA9264	3,5-Dichloro-2,4,6-trifluoropyridine	I	6.1	2, B9, B14, B32, T20, TP4, TP13, TP38, TP45	None	227	244	Forbidden
8 UN1764	Dichloroacetic acid	II	8	A3, A6, A7, B2, IB2, N34, T8, TP2	154	202	242	1 L
6.1 UN2649	1,3-Dichloroacetone	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg
8 UN1765	Dichloroacetyl chloride	II	8	A3, A6, A7, B2, B6, IB2, N34, T7, TP2	154	202	242	1 L
Forbidden	Dichloroacetylene							
6.1 UN1590	Dichloroanilines, liquid	II	6.1	IB2, T7, TP2	153	202	243	5 L
6.1 UN3442	Dichloroanilines, solid	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg
6.1 UN1591	<i>o</i> -Dichlorobenzene	III	6.1	IB3, T4, TP1	153	203	241	60 L
6.1 UN1916	2,2'-Dichlorodisethyl ether	II	6.1, 3	IB2, N33, N34, T7, TP2	153	202	243	5 L
2.2 UN2802	Dichlorodifluoromethane and difluoroethane azeotropic mixture or Refrigerant gas R-500 with approximately 74 percent dichlorodifluoromethane.		2.2	T50	306	304	314, 315	75 kg
2.2 UN1028	Dichlorodifluoromethane or Refrigerant gas R-12.		2.2	T50	306	304	314, 315	75 kg
6.1 UN2249	Dichlorodimethyl ether, symmetrical	I	6.1, 3	IB2, T4, TP1	None	201	243	Forbidden
3 UN2362	1,1-Dichloroethane	II	3		150	202	242	5 L
Forbidden	1,2-Dichloroethane, see Ethylene dichloride.							
Forbidden	Dichloroethyl sulfide							
3 UN1150	1,2-Dichloroethylene	II	3	IB2, T7, TP2	150	202	242	5 L
2.2 UN1029	Dichlorofluoromethane or Refrigerant gas R21.		2.2	T50	306	304	314, 315	75 kg
5.1 UN2465	Dichloroisocyanuric acid, dry or Dichloroisocyanuric acid salts.	II	5.1	28, IB8, IP2, IP4, T3, TP33	152	212	240	5 kg
6.1 UN2490	Dichloroisopropyl ether	II	6.1	IB2, T7, TP2	153	202	243	5 L
6.1 UN1593	Dichloromethane	III	6.1	IB3, IP8, N36, T7, TP2	153	203	241	60 L
3 UN1152	Dichloropentanes	III	3	B1, IB3, T2, TP1	150	203	242	60 L
6.1 UN2250	Dichlorophenyl isocyanates	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg
8 UN1766	Dichlorophenyltrichlorosilane	II	8	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden
3 UN1279	1,2-Dichloropropane	II	3	IB2, N36, T4, TP1	150	202	242	5 L
6.1 UN2750	1,3-Dichloropropanol-2	II	6.1	IB2, T7, TP2	153	202	243	5 L

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
(1)	<i>Dichloropropene and propylene di-chloride mixture, see 1,2-Dichloropropane.</i>	3	UN2047	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Dichloropropane	3	UN2047	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Dichlorosilane	2.3	UN2189		2, 3, 2, 1, 8.	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	D	17, 40
	1,2-Dichloro-1,1,2,2-tetrafluoroethane or Refrigerant gas R 114.	2.2	UN1958		2, 2	T50	306	304	314, 315.	75 kg	150 kg	A	
	<i>Dichlorovinylchloroarsine</i>	Forbidden											
	<i>Dicycloheptadiene, see Bicyclo [2, 2, 1] hepta-2,5-diene, stabilized.</i>												
	Dicyclohexylamine	8	UN2565	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Dicyclohexylammonium nitrite	4.1	UN2687	III	4, 1	IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	48
	Dicyclopentadiene	3	UN2048	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Didymium nitrate	5.1	UN1465	III	5, 1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
D	Diesel fuel	3	NA1993	III	None	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
1	Diesel fuel	3	UN1202	III	3	144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	<i>Diethanol nitrosamine dinitrate (dry)</i>	Forbidden											
	Diethoxymethane	3	UN2373	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	3,3-Diethoxypropene	3	UN2374	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Diethyl carbonate	3	UN2366	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	<i>Diethyl cellosolve, see Ethylene glycol diethyl ether.</i>												
	Diethyl ether or Ethyl ether	3	UN1155	I	3	T11, TP2	150	201	243	1 L	30 L	E	40
	Diethyl ketone	3	UN1156	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>Diethyl peroxydicarbonate, with more than 27 percent in solution.</i>	Forbidden											
	Diethyl sulfide	6.1	UN1594	II	6, 1	IB2, T7, TP2	153	202	243	5 L	60 L	C	
	Diethyl sulfide	3	UN2375	II	3	IB2, T7, TP1, TP13	None	202	243	5 L	60 L	E	
	Diethylamine	3	UN1154	II	3, 8	A3, IB2, N34, T7, TP1	150	202	243	1 L	5 L	E	40
	2-Diethylaminoethanol	8	UN2686	II	8, 3	B2, IB2, T7, TP2	None	202	243	1 L	30 L	A	
	3-Diethylamino-propylamine	3	UN2684	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	
	N, N-Diethylaniline	6.1	UN2432	III	6, 1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
+	Diethylbenzene	3	UN2049	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

UN Number	Proper Shipping Name	Class	Subclass	Label	Quantity	Special Provisions	TP	Other	Quantity	Special Provisions	TP	Other	
8 UN1767	Diethylchlorosilane	8	1.1D	Forbidden	None	None	A7, B6, N34, T10, TP2, TP7, TP13	206	243	None	Forbidden	30 L	40
8 UN0075	Diethylene glycol dinitrate, desensitized with not less than 25 percent non-volatile water-insoluble phlegmatizer, by mass.	8	1.1D	Forbidden	None	None		62	None	None	Forbidden	Forbidden	21E
8 UN2079	Diethylenetriamine	8	8	Forbidden	154	None	B2, IB2, T7, TP2	202	242	None	1 L	30 L	40, 52
8 UN2685	N,N-Diethylethylenediamine	8	8, 3	Forbidden	None	None	IB2, T7, TP2	202	243	None	1 L	30 L	40, 52
8 UN2751	Diethylgold bromide	8	8	Forbidden	None	None	B2, IB2, T7, TP2	212	240	None	15 kg	50 kg	12, 40
2.1 UN1030	1,1-Difluoroethanes, see 1-Chloro-1,1-difluoroethanes.	2.1	2.1	Forbidden	306	None	T50	304	314, 315	None	Forbidden	150 kg	40
2.1 UN1959	1,1-Difluoroethylene or Refrigerant gas R 1132a.	2.1	2.1	Forbidden	306	None	T50	304	None	None	Forbidden	150 kg	40
2.1 UN3252	Difluoromethane or Refrigerant gas R 32.	2.1	2.1	Forbidden	306	None	T50	302	314, 315	None	Forbidden	150 kg	40
8 UN1768	Difluorophosphoric acid, anhydrous	8	8	Forbidden	None	None	A6, A7, B2, IB2, N5, N34, T8, TP2	202	242	None	1 L	30 L	40
3 UN2376	2,3-Dihydroxyran	3	3	Forbidden	150	None	IB2, T4, TP1	202	242	None	5 L	60 L	40
Forbidden	1,8-Dihydroxy-2,4,5,7-tetrahydroquinone (chrysanminic acid).	Forbidden											
3 UN1157	Diiodoethylene	3	3	Forbidden	150	None	B1, IB3, T2, TP1	203	242	None	60 L	220 L	40
3 UN2361	Diisobutyl ketone	3	3, 8	Forbidden	150	None	B1, IB3, T4, TP1	203	242	None	5 L	60 L	40
3 UN2050	Diisobutylamine	3	3	Forbidden	150	None	IB2, T4, TP1	202	242	None	5 L	60 L	40
8 UN1902	Diisobutylene, isomeric compounds	8	8	Forbidden	154	None	IB3, T4, TP1	203	241	None	5 L	60 L	40
3 UN1159	Diisooctyl acid phosphate	3	3	Forbidden	150	None	IB2, T4, TP1	202	242	None	5 L	60 L	40
3 UN1159	Diisopropyl ether	3	3	Forbidden	150	None	IB2, T4, TP1	202	242	None	5 L	60 L	40
3 UN1158	Diisopropylamine	3	3, 8	Forbidden	150	None	IB2, T7, TP1	202	243	None	1 L	5 L	40
Forbidden	Diisopropylbenzene hydroperoxide, with more than 72 percent in solution.	Forbidden											
6.1 UN2521	Diketene, stabilized	6.1	6.1, 3	Forbidden	None	None	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	227	244	None	Forbidden	Forbidden	26, 27, 40
3 UN2252	1,2-Dimethoxyethane	3	3	Forbidden	150	None	IB2, T4, TP1	202	242	None	5 L	60 L	40
3 UN2377	1,1-Dimethoxyethane	3	3	Forbidden	150	None	IB2, T7, TP1	202	242	None	5 L	60 L	40
3 UN1161	Dimethyl carbonate	3	3	Forbidden	150	None	IB2, T4, TP1	202	242	None	5 L	60 L	40
Forbidden	Dimethyl chlorophosphate, see Dimethyl thiophosphoryl chloride.	Forbidden											
3 UN2381	2,5-Dimethyl-2,5-dihydroperoxyhexane, with more than 82 percent with water.	3	3	Forbidden	150	None	IB2, T4, TP1	202	242	None	5 L	60 L	40
2.1 UN1033	Dimethyl disulfide	2.1	2.1	Forbidden	306	None	T50	304	314, 315	None	Forbidden	150 kg	40
3 UN2266	Dimethyl-N-propylamine	3	3, 8	Forbidden	150	None	IB2, T7, TP2, TP13	202	243	None	1 L	5 L	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Dimethyl sulfate	6.1	UN1595	I	6.1, 8	2, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Dimethyl sulfide	3	UN1164	II	3	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	40
	Dimethyl thiophosphoryl chloride	6.1	UN2267	II	6.1, 8	IB2, T7, TP2	153	202	243	1 L	30 L	B	25
	Dimethylamine, anhydrous	2.1	UN1032	.....	2.1	N87, T50	None	304	314	Forbidden	150 kg	D	40
	Dimethylamine solution	3	UN1160	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	52
	2-Dimethylaminoacetone	3	UN2378	II	3, 6.1	IB2, T7, TP1	150	202	243	1 L	60 L	A	40, 52
	2-Dimethylaminoethanol	8	UN2051	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	.....
	2-Dimethylaminoethyl acrylate	6.1	UN3302	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	D	25
	2-Dimethylaminoethyl methacrylate	6.1	UN2522	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	40
	N,N-Dimethylaniline	6.1	UN2253	II	6.1	IB1, T7, TP2	153	202	243	5 L	60 L	A	.....
	2,3-Dimethylbutane	3	UN2457	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	E	.....
	1, 3-Dimethylbutylamine	3	UN2379	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	52
	Dimethylcarbamoyl chloride	8	UN2262	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	40
	Dimethylcyclohexanes	3	UN2263	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	N,N-Dimethylcyclohexylamine	8	UN2264	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	40
	Dimethyldichlorosilane	3	UN1162	II	3, 8	B77, T10, TP2, TP7, TP13	None	206	243	Forbidden	Forbidden	B	40
	Dimethyldiethoxysilane	3	UN2380	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Dimethyldioxanes	3	UN2707	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	N,N-Dimethylformamide	3	UN2265	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Dimethylhexane dithydroperoxide (dry)	Forbidden	.....	.....	.....	B1, IB3, T2, TP2	.....	203	242	60 L	220 L	A	.....
	Dimethylhydrazine, symmetrical	6.1	UN2382	I	6.1, 3	2, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 52, 74
	Dimethylhydrazine, unsymmetrical	6.1	UN1163	I	6.1, 3, 8	2, B7, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	21, 38, 40, 52, 100
	2,2-Dimethylpropane	2.1	UN2044	.....	2.1	IB8, IP2, IP4, T3, TP33	306	304	314	Forbidden	150 kg	E	40
	Dinitro-o-cresol	6.1	UN1598	II	6.1	.....	153	212	242	25 kg	100 kg	A	.....
	1,3-Dinitro-5,5-dimethyl hydantoin	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Dinitro-7,8-dimethylglycoluril (dry)	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1,3-Dinitro-4,5-dinitrosobenzene	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

1,4-Dinitro-1,1,4,4-tetramethylolbutanetetrinitrate (dry)	ForbIDDEN																		91
2,4-Dinitro-1,3,5-trimethylbenzene	ForbIDDEN																		91
Dinitroanisines	6.1	UN1596	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	100 kg	25 kg	242	A	100 kg	A			91
Dinitrobenzenes, liquid	6.1	UN1597	III	6.1	11, IB2, T7, TP2	153	203	243	5 L	60 L	220 L	60 L	241	A	60 L	A			91
Dinitrobenzenes, solid	6.1	UN3443	II	6.1	11, IB3, T7, TP2	153	212	242	25 kg	100 kg	100 kg	25 kg	242	A	100 kg	A			91
Dinitrochlorobenzenes, see Chlorodinitrobenzene.																			
1,2-Dinitroethane	ForbIDDEN																		
1,1-Dinitroethane (dry)	ForbIDDEN																		
Dinitrogen tetroxide	2.3	UN1067		2.3, 5.1, 6.1	1, B7, B14, B45, B46, B61, B66, B67, B77, T50, TP21	None	336	314	ForbIDDEN	ForbIDDEN	ForbIDDEN	ForbIDDEN	314	D	ForbIDDEN	D			40, 89, 90
Dinitroglucuril or Dingui	1.1D	UN0489	II	1.1D		None	62	None	ForbIDDEN	ForbIDDEN	ForbIDDEN	ForbIDDEN	None	10	ForbIDDEN	10			5E
Dinitroethane	1.1D	UN0076	II	1.1D, 6.1		None	62	None	ForbIDDEN	ForbIDDEN	ForbIDDEN	ForbIDDEN	None	10	ForbIDDEN	10			5E
Dinitrophenol, dry or wetted with less than 15 percent water, by mass.	6.1	UN1599	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	60 L	60 L	243	A	60 L	A			36
Dinitrophenol solutions	4.1	UN1320	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	220 L	60 L	241	A	220 L	A			36
Dinitrophenol, wetted with not less than 15 percent water, by mass.	4.1	UN1320	I	4.1, 6.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	15 kg	1 kg	None	E	15 kg	E			28, 36
Dinitrophenolates, alkali, metals, dry or wetted with less than 15 percent water, by mass.	1.3C	UN0077	II	1.3C, 6.1		None	62	None	ForbIDDEN	ForbIDDEN	ForbIDDEN	ForbIDDEN	None	10	ForbIDDEN	10			5E
Dinitrophenolates, wetted with not less than 15 percent water, by mass.	4.1	UN1321	I	4.1, 6.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	15 kg	1 kg	None	E	15 kg	E			28, 36
Dinitropropylene glycol	ForbIDDEN																		
Dinitroresorcinol, dry or wetted with less than 15 percent water, by mass.	1.1D	UN0078	II	1.1D		None	62	None	ForbIDDEN	ForbIDDEN	ForbIDDEN	ForbIDDEN	None	10	ForbIDDEN	10			5E
2,4-Dinitroresorcinol (heavy metal salts of) (dry)	ForbIDDEN																		
4,6-Dinitroresorcinol (heavy metal salts of) (dry)	ForbIDDEN																		
Dinitroresorcinol, wetted with not less than 15 percent water, by mass.	4.1	UN1322	I	4.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	15 kg	1 kg	None	E	15 kg	E			28, 36
3,5-Dinitrosalicylic acid (lead salt) (dry)	ForbIDDEN																		
Dinitrosobenzene	1.3C	UN0406	II	1.3C		None	62	None	ForbIDDEN	ForbIDDEN	ForbIDDEN	ForbIDDEN	None	10	ForbIDDEN	10			
Dinitrosobenzylamine and salts of (dry)	ForbIDDEN																		
2,2-Dinitrotribenzene	ForbIDDEN																		
Dinitrotoluenes, liquid	6.1	UN2038	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	60 L	5 L	243	A	60 L	A			
Dinitrotoluenes, molten	6.1	UN1600	II	6.1	IB7, TP3	None	202	243	ForbIDDEN	ForbIDDEN	ForbIDDEN	ForbIDDEN	243	C	ForbIDDEN	C			
Dinitrotoluenes, solid	6.1	UN3454	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	100 kg	25 kg	242	A	100 kg	A			
1,9-Dinitroxy pentamethylene-2,4,6,8-tetramine (dry)	ForbIDDEN																		

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage		
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other	
G	Dioxane	3	UN1165	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Dioxolane	3	UN1166	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40	
	Dipentene	3	UN2052	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Diphenylamine chlorarsine	6.1	UN1698	I	6.1	T6, TP33	None	201	None	Forbidden	Forbidden	D	40	
	Diphenylchlorarsine, liquid	6.1	UN1699	I	6.1	A8, B14, B32, N33, N34, T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	D	40	
	Diphenylchlorarsine, solid	6.1	UN3450	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	D	40	
	Diphenyldichlorosilane	8	UN1769	II	8	A7, B2, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	30 L	C	40	
	Diphenylmethyl bromide	8	UN1770	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	D	40	
	Dipicryl sulfide, dry or wetted with less than 10 percent water, by mass	1.1D	UN0401	II	1,1D	.....	None	62	None	Forbidden	Forbidden	10	.....
	Dipicryl sulfide, wetted with not less than 10 percent water, by mass	4.1	UN2852	I	4.1	162, A2, N41, N84	None	211	None	Forbidden	0.5 kg	D	28	
Dipicrylamine, see Hexanitrotriphenylamine .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dipropionyl peroxide, with more than 28 percent in solution	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
D-n-propyl ether	3	UN2384	III	3	IB2, T4, TP1	150	202	242	242	5 L	60 L	B	.....
Dipropyl ketone	3	UN2710	III	3	B1, IB3, T2, TP1	150	203	242	242	60 L	220 L	A	.....
Dipropylamine	3	UN2383	III	3, 8	IB2, T7, TP1	150	202	243	243	1 L	5 L	B	.....
Disinfectant, liquid, corrosive, n.o.s.	8	UN1903	I	8	A6, A7, B10, T14, TP2, TP27	None	201	243	243	0.5 L	2.5 L	B	.....
G	Disinfectants, liquid, corrosive n.o.s.	8	UN1903	III	8	B2, IB2, T7, TP2	154	202	242	242	1 L	30 L	B
		8	UN3142	III	8	IB3, T4, TP1	154	203	241	241	5 L	60 L	A
G	Disinfectants, liquid, toxic, n.o.s.	6.1	UN3142	II	6.1	A4, T14, TP2, TP27	None	201	243	243	1 L	30 L	A	40
		6.1	UN1601	III	6.1	IB2, T11, TP2, TP27	153	202	243	243	5 L	60 L	A	40
G	Disinfectants, solid, toxic, n.o.s.	6.1	UN1601	I	6.1	IB3, T7, TP1, TP28	153	203	241	241	60 L	220 L	A	40
		6.1	UN1601	I	6.1	IB7, IP1, T6, TP33	None	211	242	242	5 kg	50 kg	A	40
G	Disodium trioxosulfate	.....	.....	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
		.....	.....	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
		.....	.....	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
		.....	.....	III	8	.....	.....	.....	.....	.....	.....	.....	.....
G	Dispersant gases, n.o.s. see Refrigerant gases, n.o.s.	3	UN1167	I	3	A7, T11, TP2	None	201	243	Forbidden	30 L	E	40	
		8	UN1771	II	8	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	30 L	C	40	
.....	Dodecyltrichlorosilane	8	UN1771	II	8	.....	.....	.....	.....	.....	.....	.....

G	Dry ice, see Carbon dioxide, solid Dyes, liquid, corrosive, n.o.s. or Dye intermediates, liquid, corrosive, n.o.s.	8	UN2801	I	8	11, A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	A	.....
G	Dyes, liquid, toxic, n.o.s. or Dye intermediates, liquid, toxic, n.o.s.	6.1	UN1602	II	8	11, B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	A	.....
G	Dyes, solid, corrosive, n.o.s. or Dye intermediates, solid, corrosive, n.o.s.	8	UN3147	III	6.1	11, IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	.....
G	Dyes, solid, toxic, n.o.s. or Dye intermediates, solid, toxic, n.o.s.	6.1	UN3143	I	6.1	IB2, IP1, T6, TP33	None	201	243	1 L	30 L	A	.....
G	Dynamite, see Explosive, blasting, type A. Electrolyte (acid or alkali) for batteries, see Battery fluid, acid or Battery fluid, alkali. Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point. Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.). Elevated temperature solid, n.o.s., at or above 240 C, see §173.247(h)(4). Engines, internal combustion, flammable gas powered. Engines, internal combustion, flammable liquid powered. Environmentally hazardous substance, liquid, n.o.s. Environmentally hazardous substance, solid, n.o.s. Epibromohydrin Epichlorohydrin 1,2-Epoxy-3-ethoxypropane Esters, n.o.s.	3	UN3256	III	3	IB1, T3, TP3, TP29	None	None	247	Forbidden	Forbidden	A	.....
G		9	UN3257	III	9	IB1, T3, TP3, TP29	None	None	247	Forbidden	Forbidden	A	85
G		9	UN3258	III	9		247(h)(4)	None	247	Forbidden	Forbidden	A	85
G		9	UN3166	.....	9	135	220	220	220	Forbidden	No limit	A	.....
G		9	UN3166	.....	9	135	220	220	220	No limit	No limit	A	.....
G		9	UN3082	III	9	8, 146, 335, IB3, T4, TP1, TP29	155	203	241	No limit	No limit	A	.....
G		9	UN3077	III	9	8, 146, 335, B54, IB8, IP3, N20, T1, TP33	155	213	240	No limit	No limit	A	.....
+		6.1	UN2558	I	6.1, 3	T14, TP2, TP13	None	201	243	Forbidden	Forbidden	D	40
+		6.1	UN2023	II	6.1, 3	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	A	40
+		3	UN2752	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
+		3	UN3272	III	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	.....
+		3	UN3272	III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
D	<i>Etching acid, liquid, n.o.s., see Hydrofluoric acid, etc.</i>	2.1	UN1035										
	Ethane	2.1	NA1961		2.1	T75, TP5	306	304	302	Forbidden	150 kg	E	40
	Ethane-Propane mixture, refrigerated liquid.	2.1	UN1961		2.1	T75, TP5	None	316	314, 315	Forbidden	Forbidden	D	40
	Ethane, refrigerated liquid	2.1	UN1961		2.1	T75, TP5	None	None	315	Forbidden	Forbidden	D	40
	Ethanol amine dinitrate	Forbidden	UN3475		3	144, 177, IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Ethanol and gasoline mixture or Ethanol and motor spirit mixture or Ethanol and petrol mixture, with more than 10% ethanol.	3	UN1170		II	24, IB2, T4, TP1	150	202	242	5 L	60 L	A	
	Ethanol or Ethyl alcohol or Ethanol solutions or Ethyl alcohol solutions.	3	UN1170		III	24, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Ethanolamine or Ethanolamine solutions.	8	UN2491		III	IB3, T4, TP1	154	203	241	5 L	60 L	A	52.
	Ethers, n.o.s.	3	UN3271		II	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
	Ethyl acetate	3	UN1173		III	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Ethyl acrylate, stabilized	3	UN1917		II	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Ethyl alcohol, see Ethanol					IB2, T4, TP1, TP13	150	202	242	5 L	60 L	B	40
	Ethyl aldehyde, see Acetaldehyde												
	Ethyl amyl ketone	3	UN2271		III	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	N-Ethylbenzyloluidines, solid	6.1	UN3460		III	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
N-Ethyl-N-benzylaniline	6.1	UN2274		III	IB3, T4, TP1	153	203	241	60 L	220 L	A		
Ethyl borate	3	UN1176		III	IB2, T4, TP1	150	202	242	5 L	60 L	B		
Ethyl bromide	6.1	UN1891		II	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	B	40, 85	
Ethyl bromoacetate	6.1	UN1603		II	IB2, T7, TP2	None	202	243	Forbidden	Forbidden	D	40	
Ethyl butyl ether	3	UN1179		III	B1, IB2, T4, TP1	150	202	242	5 L	60 L	A		
Ethyl butyrate	3	UN1180		III	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
Ethyl chloride	2.1	UN1037			B77, N86, T50	None	322	314, 315.	Forbidden	150 kg	B	40	
Ethyl chloroacetate	6.1	UN1181		II	IB2, T7, TP2	153	202	243	5 L	60 L	A		
Ethyl chloroformate	6.1	UN1182		I	2, B9, B14, B32, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	21, 40, 100	
Ethyl 2-chloropropionate	3	UN2935		III	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		

+	Ethyl chloroethoformate	8	UN2826	II	8, 6.1, 3.	2, B9, B14, B32, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	A	40
	Ethyl crotonate	3	UN1862	II	3	IB2, T4, TP2	150	202	242	5 L	60 L	B	40
	Ethyl ether, see Diethyl ether												
	Ethyl fluoride or Refrigerant gas R161.	2.1	UN2453		2.1		306	304	314, 315.	Forbidden	150 kg	E	40
	Ethyl formate	3	UN1190	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40, 52
	Ethyl hydroperoxide	Forbidden											
+	Ethyl isobutyrate	3	UN2385	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40, 52
	Ethyl isocyanate	3	UN2481	I	3, 6.1	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40, 52
	Ethyl lactate	3	UN1192	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	95, 102
	Ethyl mercaptan	3	UN2363	I	3	A6, T11, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Ethyl methacrylate, stabilized	3	UN2277	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Ethyl methyl ether	2.1	UN1039		2.1		None	201	314, 315.	Forbidden	150 kg	B	40
	Ethyl methyl ketone or Methyl ethyl ketone.	3	UN1193	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Ethyl nitrite solutions	3	UN1194	I	3, 6.1		None	201	None	Forbidden	Forbidden	E	40, 105
	Ethyl orthoformate	3	UN2524	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	Ethyl oxalate	6.1	UN2525	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40
	Ethyl perchlorate	Forbidden											
D	Ethyl phosphonothioic dichloride, anhydrous.	6.1	NA2927	I	6.1, 8	2, B9, B14, B32, B74, T20, TP4, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
D	Ethyl phosphonous dichloride, anhydrous pyrophoric liquid.	6.1	NA2845	I	6.1, 4.2.	2, B9, B14, B32, B74, T20, TP4, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	18
D	Ethyl phosphorodichloridate	6.1	NA2927	I	6.1, 8	2, B9, B14, B32, B74, T20, TP4, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Ethyl propionate	3	UN1195	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Ethyl propyl ether	3	UN2615	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
	Ethyl silicate, see Tetraethyl silicate												
	Ethylacetylene, stabilized	2.1	UN2452		2.1	N88	None	304	314, 315.	Forbidden	150 kg	B	40
	Ethylamine	2.1	UN1036		2.1	B77, N87, T50	None	321	314, 315.	Forbidden	150 kg	D	40
	Ethylamine, aqueous solution with not less than 50 percent but not more than 70 percent ethylamine.	3	UN2270	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40, 52.
	N-Ethylaniline	6.1	UN2272	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52, 74
	2-Ethylaniline	6.1	UN2273	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52, 74
	Ethylbenzene	3	UN1175	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	N-Ethylbenzyltoluidines liquid	6.1	UN2753	III	6.1	IB3, T7, TP1	153	203	241	60 L	220 L	A	40
	2-Ethylbutanol	3	UN2275	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	2-Ethylbutyl acetate	3	UN1177	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	2-Ethylbutylaldehyde	3	UN1178	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Ethylchloroarsine	6.1	UN1892	I	6.1	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Ethyldichlorosilane	4.3	UN1183	I	4.3, 8, 3	A2, A3, A7, N34, T14, TP2, TP7, TP13	None ...	201 ...	244 ...	Forbidden	1 L	D	21, 28, 40, 49, 100
	Ethylene, acetylene and propylene in mixture, refrigerated liquid with at least 71.5 percent ethylene with not more than 22.5 percent acetylene and not more than 6 percent propylene.	2.1	UN3138	.....	2.1	T75, TP5	None ...	304 ...	314, 315.	Forbidden	Forbidden	D	40, 57
	Ethylene chlorohydrin	6.1	UN1135	I	6.1, 3	2, B9, B14, B32, T20, TP2, TP13, TP36, TP45	None ...	227 ...	244 ...	Forbidden	Forbidden	D	40
	Ethylene	2.1	UN1962	.....	2.1 .....	.....	306 ...	304 ...	302 ...	Forbidden	150 kg	E	40
	Ethylene diamine diphosphate	Forbidden	.....	.....	.....	.....	.....	.....	.....	Forbidden	.....	.....	.....
	Ethylene dibromide	6.1	UN1605	I	6.1	2, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP45	None ...	227 ...	244 ...	Forbidden	Forbidden	D	40
	Ethylene dibromide and methyl bromide liquid mixtures, see Methyl bromide and ethylene dibromide, liquid mixtures.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Ethylene dichloride	3	UN1184	II	3, 6.1	IB2, N36, T7, TP1	150 ...	202 ...	243 ...	1 L	60 L	B	40
	Ethylene glycol diethyl ether	3	UN1153	III	3	IB2, T4, TP1	150 ...	202 ...	242 ...	5 L	60 L	A	.....
	Ethylene glycol dinitrate	Forbidden	.....	.....	.....	B1, IB3, T2, TP1	150 ...	203 ...	242 ...	60 L	220 L	A	.....
	Ethylene glycol monoethyl ether	3	UN1171	III	3	B1, IB3, T2, TP1	150 ...	203 ...	242 ...	60 L	220 L	A	.....
	Ethylene glycol monoethyl ether acetate.	3	UN1172	III	3	B1, IB3, T2, TP1	150 ...	203 ...	242 ...	60 L	220 L	A	.....
	Ethylene glycol monomethyl ether	3	UN1188	III	3	B1, IB3, T2, TP1	150 ...	203 ...	242 ...	60 L	220 L	A	.....
	Ethylene glycol monomethyl ether acetate.	3	UN1189	III	3	B1, IB3, T2, TP1	150 ...	203 ...	242 ...	60 L	220 L	A	.....
	Ethylene oxide and carbon dioxide mixture with more than 87 percent ethylene oxide.	2.3	UN3300	.....	2.3, 2.1.	4	None ...	304 ...	314, 315.	Forbidden	Forbidden	D	40
	Ethylene oxide and carbon dioxide mixtures with more than 9 percent but not more than 87 percent ethylene oxide.	2.1	UN1041	.....	2.1	T50	306 ...	304 ...	314, 315.	Forbidden	25 kg	B	40

Ethylene oxide and carbon dioxide mixtures with not more than 9 percent ethylene oxide.	2.2	UN1952	.....	2.2	.....	304	.....	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide and chlorotrifluoroethane mixture with not more than 8.8 percent ethylene oxide.	2.2	UN3297	.....	2.2	.....	304	.....	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide and dichlorodifluoromethane mixture, with not more than 12.5 percent ethylene oxide.	2.2	UN3070	.....	2.2	.....	304	.....	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide and pentafluoroethane mixture with not more than 7.9 percent ethylene oxide.	2.2	UN3298	.....	2.2	.....	304	.....	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide and propylene oxide mixtures, with not more than 30 percent ethylene oxide.	3	UN2983	I	3, 6.1	5, A11, N4, N34, T14, TP2, TP7, TP13	None	201	243	Forbidden	30 L	E	40
Ethylene oxide and tetrafluoroethane mixture with not more than 5.6 percent ethylene oxide.	2.2	UN3299	.....	2.2	.....	304	.....	314, 315.	75 kg	150 kg	A	.....
Ethylene oxide or Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 degrees C.	2.3	UN1040	.....	2.3, 2.1.	4, A59, T50, TP20	None	323	323	Forbidden	Forbidden	D	40
Ethylene, refrigerated liquid (cryogenic liquid).	2.1	UN1038	.....	2.1	.....	316	.....	318, 319.	Forbidden	Forbidden	D	40
Ethylenediamine	8	UN1604	II	8, 3	IB2, T7, TP2	154	202	243	1 L	30 L	A	40, 52.
Ethyleneimine, stabilized	6.1	UN1185	I	6.1, 3	1, B9, B14, B30, B77, N25, N32, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
Ethylhexaldehyde, see Octyl aldehydes etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2-Ethylhexyl chloroformate	6.1	UN2748	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100, 40
2-Ethylhexylamine	3	UN2276	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	.....
Ethylphenyldichlorosilane	8	UN2435	II	8	A7, B2, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	30 L	C	.....
1-Ethylpiperidine	3	UN2386	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	52.
N-Ethylolulidines	6.1	UN2754	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	.....
Ethyltrichlorosilane	3	UN1196	II	3, 8	A7, N34, T10, TP2, TP7, TP13	None	206	243	1 L	5 L	B	.....
Etiologic agent, see Infectious substances, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Explosive articles, see Articles, explosive, n.o.s. etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Explosive, blasting, type A	1.1D	UN0081	II	1.1D	.....	None	62	None	Forbidden	Forbidden	10	19E, 21E
Explosive, blasting, type B	1.1D	UN0082	II	1.1D	.....	None	62	None	Forbidden	Forbidden	10	19E
Explosive, blasting, type B or Agent blasting, Type B.	1.5D	UN0331	II	1.5D	.....	None	62	None	Forbidden	Forbidden	10	19E

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$ 172.102)	(8) Packaging (\$ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
	Explosive, blasting, type C	1.1D ..	UN0083	II	1.1D ..	123	None ..	62	None	Forbidden	Forbidden	10	22E
	Explosive, blasting, type D	1.1D ..	UN0084	II	1.1D ..		None ..	62	None	Forbidden	Forbidden	10	
	Explosive, blasting, type E	1.1D ..	UN0241	II	1.1D ..		None ..	62	None	Forbidden	Forbidden	10	19E
	Explosive, blasting, type E or Agent blasting, Type E.	1.5D ..	UN0332	II	1.5D ..	105, 106	None ..	62	None	Forbidden	Forbidden	10	19E
	Explosive, forbidden. See § 173.54 ..	Forbidden											
	Explosive substances, see Sub- stances, explosive, n.o.s. etc.												
	Explosives, slurry, see Explosive, blasting, type E.												
	Explosives, water gels, see Explo- sive, blasting, type E.												
	Extracts, aromatic, liquid	3	UN1169	III	3	149, IB2, T4, TP1, TP8	202	242	242	5 L	60 L	B	
	Extracts, flavoring, liquid	3	UN1197	III	3	B1, IB3, T2, TP1	203	242	242	60 L	220 L	A	
	Fabric with animal or vegetable oil, see Fibers or fabrics, etc.						150	202	242	5 L	60 L	B	
	Ferric arsenate	6.1	UN1606	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Ferric arsenite	6.1	UN1607	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Ferric chloride, anhydrous	8	UN1773	III	8	IB8, IP3, T1, TP33	154	213	242	25 kg	100 kg	A	
	Ferric chloride, solution	8	UN2582	III	8	B15, IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Ferric nitrate	5.1	UN1466	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Ferrocenium	4.1	UN1323	II	4.1	59, A19, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	A	
	Ferrosilicon with 30 percent or more but less than 90 percent silicon.	4.3	UN1408	III	4.3, 6.1.	A1, A19, B6, IB8, IP4, IP7, T1, TP33	151	213	240	25 kg	100 kg	A	13, 40, 52, 53, 85, 103
D	Ferrous arsenate	6.1	UN1608	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
D	Ferrous chloride, solid	8	NA1759	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Ferrous chloride, solution	8	NA1760	II	8	B3, IB2, T1, TP2, TP27	154	202	242	1 L	30 L	B	40
	Ferrous metal borings or Ferrous metal shavings or Ferrous metal turnings or Ferrous metal cuttings in a form liable to self-heating	4.2	UN2793	III	4.2	A1, A19, IB8, IP3, IP7	None ..	213	241	25 kg	100 kg	A	
	Fertilizer ammoniating solution with free ammonia.	2.2	UN1043		2.2	N87	306	304	314, 315.	Forbidden	150 kg	E	40

UN Number	Proper Shipping Name	Class	Subclass	PG	Quantity	Special Provisions	Quantity	Special Provisions	Quantity	Special Provisions	Quantity	Special Provisions
4.2 UN1372	Fibers, animal or Fibers, vegetable burnt, wet or damp.	III	4.2	.....	151	.....	240	.....	Forbidden	A	.....	.....
4.1 UN3360	Fibers, vegetable, dry	III	4.1	.....	151	.....	240	.....	No Limit	A	.....	.....
4.2 UN1373	Fibers or Fabrics, animal or vegetable or Synthetic, n.o.s. with animal or vegetable oil	III	4.2	.....	None	137, IB8, IP3, T1, TP33	241	.....	Forbidden	A	.....	.....
4.1 UN1353	Fibers or Fabrics impregnated with weakly nitrated nitrocellulose, n.o.s.	III	4.1	.....	None	A1, IB8, IP3	240	.....	100 kg	D	.....	.....
4.1 UN1324	Films, nitrocellulose base, from which gelatine has been removed; film scrap, see Celluloid scrap.	III	4.1	.....	None	.....	None	.....	25 kg	D	.....	28
8 UN1774	Films, nitrocellulose base, gelatine coated (except scrap).	II	8	.....	154	N41	None	.....	1 L	A	.....	.....
2.2 UN1044	Fire extinguisher charges, corrosive liquid.	.....	2.2	.....	309	18, 110	None	.....	75 kg	A	.....	.....
4.1 UN2623	Fire extinguisher charges, expelling explosive, see Cartridges, power device.	III	4.1	.....	None	A1, A19	None	.....	25 kg	A	.....	52
1.1G UN0333	Fireworks	II	1.1G	.....	None	108	None	.....	Forbidden	07	.....	.....
1.2G UN0334	Fireworks	II	1.2G	.....	None	108	None	.....	Forbidden	07	.....	.....
1.3G UN0335	Fireworks	II	1.3G	.....	None	108	None	.....	Forbidden	07	.....	.....
1.4G UN0336	Fireworks	II	1.4G	.....	None	108	None	.....	75 kg	06	.....	.....
1.4S UN0337	Fireworks	II	1.4S	.....	None	108	None	.....	25 kg	05	.....	.....
9 UN03316	First aid kits	.....	9	.....	15	161	None	.....	10 kg	A	.....	.....
9 UN2216	Fish meal, stabilized or Fish scrap, stabilized.	III	None	.....	155	155, IB8, IP3, T1, TP33	218	.....	No limit	B	.....	88, 122, 128
4.2 UN1374	Fish meal, unstabilized or Fish scrap, unstabilized.	II	4.2	.....	None	155, A1, A19, IB8, IP2, IP4, T3, TP33	241	.....	15 kg	B	.....	18, 128
3 UN3286	Flammable compressed gas, see Compressed or Liquefied gas, flammable, etc.	I	3, 6.1, 8	.....	None	.....	243	.....	Forbidden	E	.....	21, 40, 100
3 UN2924	Flammable compressed gas (small receptacles not fitted with a dispersion device, not refillable), see Receptacles, etc.	II	3, 6.1, 8	.....	150	T14, TP2, TP13, TP27	243	.....	1 L	B	.....	21, 40, 100
3 UN2924	Flammable gas in lighters, see Lighters or lighter refills, cigarettes, containing flammable gas.	I	3, 8	.....	None	IB2, T11, TP2, TP13, TP27	243	.....	0.5 L	E	.....	40
3 UN2924	Flammable liquid, toxic, corrosive, n.o.s.	II	3, 8	.....	150	IB2, T11, TP2, TP27	243	.....	1 L	B	.....	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi- cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)			(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)	
G	Flammable liquids, n.o.s.	3	UN1993	III	3, 8	B1, IB3, T7, TP1, TP28	150	203	242	5 L	60 L	40	A	
				I	3	T11, TP1, TP27	150	201	243	1 L	30 L		E	
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L		B	
				III	3	B1, B52, IB3, T4, TP1, TP29	150	203	242	60 L	220 L		A	
G	Flammable liquids, toxic, n.o.s.	3	UN1992	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	40	E	
				II	3, 6.1	IB2, T7, TP2, TP13	150	202	243	1 L	60 L	40	B	
G	Flammable solid, corrosive, inor- ganic, n.o.s.	4.1	UN3180	III	3, 6.1	B1, IB3, T7, TP1, TP28	150	203	242	60 L	220 L		A	
				II	4.1, 8	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	40	D	
G	Flammable solid, inorganic, n.o.s.	4.1	UN3178	III	4.1, 8	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	40	D	
				II	4.1	A1, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg		B	
G	Flammable solid, organic, molten, n.o.s.	4.1	UN3176	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg		B	
				II	4.1	IB1, T3, TP3, TP26	151	212	240	Forbidden	Forbidden		C	
G	Flammable solid, oxidizing, n.o.s.	4.1	UN3097	III	4.1	IB1, T1, TP3, TP26	151	213	240	Forbidden	Forbidden	40	E	
				II	4.1, 5.1	131	None	214	214	Forbidden	Forbidden		D	
				III	4.1, 5.1	131, T1, TP33	None	214	214	Forbidden	Forbidden		D	
G	Flammable solid, toxic, inorganic, n.o.s.	4.1	UN3179	II	4.1, 6.1	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	40	B	
				III	4.1, 6.1	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	40	B	
G	Flammable solids, corrosive, organic, n.o.s.	4.1	UN2925	II	4.1, 8	A1, IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	40	D	
G	Flammable solids, organic, n.o.s.	4.1	UN1325	III	4.1, 8	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	40	D	
				II	4.1	A1, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg		B	
G	Flammable solids, toxic, organic, n.o.s.	4.1	UN2926	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg		B	
				II	4.1, 6.1	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	40	B	
				III	4.1, 6.1	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	40	B	
	Flares, aerial	1.3G	UN0093	II	1.3G		None	62	None	Forbidden	75 kg		07	
	Flares, aerial	1.4G	UN0403	II	1.4G		None	62	None	Forbidden	75 kg		06	
	Flares, aerial	1.4S	UN0404	II	1.4S		None	62	None	25 kg	100 kg		05	

Flare, aerial	1.1G	UN0420	II	1.1G	None	62	None	Forbiddn	Forbiddn	07	.....
Flare, aerial	1.2G	UN0421	II	1.2G	None	62	None	Forbiddn	Forbiddn	07	.....
Flare, airplane, see Flares, aerial											
Flare, signal, see Cartridges, signal											
Flare, surface	1.3G	UN0092	II	1.3G	None	62	None	Forbiddn	Forbiddn	07	.....
Flare, surface	1.1G	UN0418	II	1.1G	None	62	None	Forbiddn	Forbiddn	07	.....
Flare, surface	1.2G	UN0419	II	1.2G	None	62	None	Forbiddn	Forbiddn	07	.....
Flare, water-activated, see Containers, water-activated, etc.											
Flash powder	1.1G	UN0094	II	1.1G	None	62	None	Forbiddn	Forbiddn	15	.....
Flash powder	1.3G	UN0305	II	1.3G	None	62	None	Forbiddn	Forbiddn	15	.....
Flue dusts, poisonous, see Arsenical dust.											
Fluoric acid, see Hydrofluoric acid, etc.											
Fluorine, compressed	2.3	UN1045	.....	2.3, 5.1, 8	None	302	None	Forbiddn	Forbiddn	D	40, 89, 90
Fluoroacetic acid	6.1	UN2642	I	6.1	None	211	242	1 kg	15 kg	E	.....
Fluoranolines	6.1	UN2941	III	6.1	None	203	241	60 L	220 L	A	.....
Fluorobenzene	3	UN2387	II	3	None	202	242	5 L	60 L	B	.....
Fluoroboric acid	8	UN1775	II	8	None	202	242	1 L	30 L	A	.....
Fluorophosphoric acid anhydrous	8	UN1776	II	8	None	202	242	1 L	30 L	A	.....
Fluorosilicates, n.o.s.	6.1	UN2856	III	6.1	None	213	240	100 kg	200 kg	A	52
Fluorosilicic acid	8	UN1778	II	8	None	202	242	1 L	30 L	A	.....
Fluorosulfonic acid	8	UN1777	I	8	None	201	243	0.5 L	2.5 L	D	40
Fluorotoluenes	3	UN2388	II	3	None	202	242	5 L	60 L	B	40
Forbidden materials. See § 173.21	Forbidden										
Formaldehyde, solutions, flammable	3	UN1198	III	3, 8	None	203	242	5 L	60 L	A	40
Formaldehyde, solutions, with not less than 25 percent formaldehyde.	8	UN2209	III	8	None	203	241	5 L	60 L	A	.....
Formalin, see Formaldehyde, solutions.											
Formic acid with not less than 10% but not more than 85% acid by mass.	8	UN3412	II	8	None	202	242	1 L	30 L	A	40
Formic acid with not less than 5% but less than 10% acid by mass.	8	UN3412	III	8	None	203	241	5 L	60 L	A	40
Formic acid with more than 85% acid by mass.	8	UN1779	II	8, 3	None	202	242	1 L	30 L	A	40
Fracturing devices, explosive, without detonators for oil wells.	1.1D	UN0099	II	1.1D	None	62	62	Forbiddn	Forbiddn	07	.....
Fuel, aviation, turbine engine	3	UN1863	I	3	None	201	243	1 L	30 L	E	.....
			II	3	None	202	242	5 L	60 L	B	.....
			III	3	None	203	242	60 L	220 L	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi- cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Fuel cell cartridges or Fuel cell car- tridges contained in equipment or Fuel cell cartridges packed with equipment, containing corrosive substances.	8	UN3477		8		230	230	230	5 kg	50 kg	A	
	Fuel cell cartridges or Fuel cell car- tridges contained in equipment or Fuel cell cartridges packed with equipment, containing flammable liquids.	3	UN3473		3		230	230	230	5 kg	50 kg	A	
	Fuel cell cartridges or Fuel cell car- tridges contained in equipment or Fuel cell cartridges packed with equipment, containing hydrogen in metal hydride.	2.1	UN3479		2.1		230	230	230	1 kg	15 kg	B	
	Fuel cell cartridges or Fuel cell car- tridges contained in equipment or Fuel cell cartridges packed with equipment, containing liquefied flammable gas.	2.1	UN3478		2.1		230	230	230	1 kg	15 kg	B	
	Fuel cell cartridges or Fuel cell car- tridges contained in equipment or Fuel cell cartridges packed with equipment, containing water-reac- tive substances.	4.3	UN3476		4.3		230	230	230	5 kg	50 kg	A	
D	Fuel oil (No. 1, 2, 4, 5, or 6)	3	NA1993	III	3	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Fuel system components (including fuel control units (FCU), carbure- tors, fuel lines, fuel pumps) see Dangerous Goods in Apparatus or Dangerous Goods in Machinery. Fulminate of mercury (dry)	Forbidden											
	Fulminate of mercury, wet, see Mer- cury fulminate, etc.	Forbidden											
	Fulminating gold	Forbidden											
	Fulminating mercury	Forbidden											

<i>Fulminating platinum</i>	Forbidden																									
<i>Fulminating silver</i>	Forbidden																									
<i>Fulminic acid</i>	Forbidden																									
<i>Fumaryl chloride</i>	8	UN1780	II	8		B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	8, 40													
<i>Fumigated</i> <i>lead</i> , see §§172.302(g), 173.9 and 176.76(h).																										
<i>Fumigated</i> transport vehicle or freight container see § 173.9.																										
<i>Furalesdehydes</i>	6.1	UN1199	II	6.1, 3		IB2, T7, TP2	153	202	243	5 L	60 L	A														
<i>Furan</i>	3	UN2389	I	3		T12, TP2, TP13	None	201	243	1 L	30 L	E	40													
<i>Furfuryl alcohol</i>	6.1	UN2874	III	6.1		IB3, T4, TP1	153	203	241	60 L	220 L	A	52, 74													
<i>Furylamine</i>	3	UN2526	III	3, 8		B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40													
<i>Fuse</i> , detonating, <i>metal clad</i> , see <i>Cord</i> , detonating, <i>metal clad</i> .																										
<i>Fuse</i> , detonating, mild effect, <i>metal clad</i> , see <i>Cord</i> , detonating, mild effect, <i>metal clad</i> .																										
<i>Fuse</i> , igniter tubular <i>metal clad</i>	1.4G	UN0103	II	1.4G						Forbidden	75 kg	06														
<i>Fuse</i> , non-detonating <i>instantaneous</i> or <i>quickmatch</i> .	1.3G	UN0101	II	1.3G						Forbidden	Forbidden	07														
<i>Fuse</i> , safety	1.4S	UN0105	II	1.4S							100 kg	05														
<i>Fusee</i> (<i>railway or highway</i>)	4.1	NA1325	II	4.1		IB2, T4, TP1	None	184	None	25 kg	50 kg	B														
<i>Fusel oil</i>	3	UN1201	III	3		B1, IB3, T2, TP1	150	202	242	5 L	60 L	B														
<i>Fuses</i> , tracer, see Tracers for ammunition.											220 L	A														
<i>Fuzes</i> , combination, <i>percussion and time</i> , see <i>Fuzes</i> , detonating (UN0257, UN0367); <i>Fuzes</i> , igniting (UN0317, UN0368).																										
<i>Fuzes</i> , detonating	1.1B	UN0106	II	1.1B				62	None	Forbidden	Forbidden	11														
<i>Fuzes</i> , detonating	1.2B	UN0107	II	1.2B				62	None	Forbidden	Forbidden	11														
<i>Fuzes</i> , detonating	1.4B	UN0257	III	1.4B		116		62	None	Forbidden	75 kg	06														
<i>Fuzes</i> , detonating	1.4S	UN0367	III	1.4S		116		62	None	25 kg	100 kg	05														
<i>Fuzes</i> , detonating, <i>with protective features</i> .	1.1D	UN0408	II	1.1D				62	None	Forbidden	Forbidden	07														
<i>Fuzes</i> , detonating, <i>with protective features</i> .	1.2D	UN0409	II	1.2D				62	None	Forbidden	Forbidden	07														
<i>Fuzes</i> , detonating, <i>with protective features</i> .	1.4D	UN0410	II	1.4D		116		62	None	Forbidden	75 kg	06														
<i>Fuzes</i> , igniting	1.3G	UN0316	II	1.3G				62	None	Forbidden	Forbidden	07														
<i>Fuzes</i> , igniting	1.4G	UN0317	II	1.4G				62	None	Forbidden	75 kg	06														
<i>Fuzes</i> , igniting	1.4S	UN0368	III	1.4S				62	None	25 kg	100 kg	05														
<i>Galactosan trinitrate</i>	Forbidden																									
<i>Gallium</i>	8	UN2803	III	8		T1, TP33	None	162	240	20 kg	20 kg	B	48													
<i>Gas cartridges</i> , (<i>flammable</i>) <i>without a release device</i> , <i>non-refillable</i> .	2.1	UN2037		2.1			306	304	None	1 kg	15 kg	B	40													
<i>Gas identification set</i>	2.3	NA9035		2.3			None	194	None	Forbidden	Forbidden	D														
<i>Gas oil</i>	3	UN1202	III	3		144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A														

D

D

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
G	Gas, refrigerated liquid, flammable, n.o.s. (cryogenic liquid).	2.1	UN3312	.....	2.1	T75, TP5	None ..	316 ...	318 ...	Forbidden	Forbidden	D	40
G	Gas, refrigerated liquid, n.o.s. (cryogenic liquid).	2.2	UN3158	.....	2.2	T75, TP5	320	316 ...	318 ...	50 kg	500 kg	D	.....
G	Gas, refrigerated liquid, oxidizing, n.o.s. (cryogenic liquid).	2.2	UN3311	.....	2.2	T75, TP5, TP22	320	316 ...	318 ...	Forbidden	Forbidden	D	.....
	Gas sample, non-pressurized, flammable, n.o.s., not refrigerated liquid.	2.1	UN3167	.....	2.1		306	302	304	1 L	5 L	D	.....
	Gas sample, non-pressurized, toxic, flammable, n.o.s., not refrigerated liquid.	2.3	UN3168	.....	2.3, 2.1	6	306	302 ...	None	Forbidden	1 L	D	.....
	Gas sample, non-pressurized, toxic, n.o.s., not refrigerated liquid.	2.3	UN3169	.....	2.3	6	306	302	None	Forbidden	1 L	D	D
	Gasohol gasoline mixed with ethyl alcohol, with not more than 10% alcohol.	3	NA1203	II	3	144, 177	150	202 ...	242 ...	5 L	60 L	E	.....
	Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol.	3	UN1203	II	3	144, 177, B1, B33, IB2, T4, TP1	150	202 ...	242 ...	5 L	60 L	E	.....
	Gasoline, casinghead, see Gasoline												
	Gelatine, blasting, see Explosive, blasting, type A.												
	Gelatine dynamites, see Explosive, blasting, type A.												
	Germane	2.3	UN2192	.....	2.3, 2.1	2	None ..	302 ...	245 ...	Forbidden	Forbidden	D	40
	Glycerol-1,3-dinitrate	Forbidden											
	Glycerol gluconate trinitrate	Forbidden											
	Glycerol lactate trinitrate	Forbidden											
	Glycerol alpha-monochloroform	6.1	UN2689	III	6.1	IB3, T4, TP1	153	203 ...	241 ...	60 L	220 L	A	.....
	Glycerol trinitrate, see Nitroglycerin, etc.												
	Glycidaldehyde	3	UN2622	II	3, 6.1	IB2, IP8, T7, TP1	150	202 ...	243 ...	1 L	60 L	A	40
	Grenades, hand or rifle, with bursting charge.	1.1D	UN0284	II	1.1D ..		.....	62	None	Forbidden	Forbidden	07	.....
	Grenades, hand or rifle, with bursting charge.	1.2D	UN0285	II	1.2D ..		.....	62	None	Forbidden	Forbidden	07	.....

UN number	Proper shipping name	Hazard class	Packaging group	Quantity limitations	Special provisions	Prohibited for transport by rail	Prohibited for transport by air	Prohibited for transport by water	Other
UN0292	Grenades, hand or rifle, with bursting charge.	1.1F	II	1.1F	None	62	None	Forbidden	08
UN0293	Grenades, hand or rifle, with bursting charge.	1.2F	II	1.2F	None	62	None	Forbidden	08
UN0110	Grenades, illuminating, see Ammunition, illuminating, etc.								
UN0318	Grenades, practice, hand or rifle	1.4S	II	1.4S	None	62	None	Forbidden	05
UN0372	Grenades, practice, hand or rifle	1.3G	II	1.3G	None	62	None	Forbidden	07
UN0452	Grenades practice Hand or rifle	1.2G	II	1.2G	None	62	None	Forbidden	07
	Grenades, smoke, see Ammunition, smoke, etc.	1.4G	II	1.4G	None	62	None	Forbidden	06
UN1467	Guandine nitrate	5.1	III	5.1	240	213	240	25 kg	A
	Guanyl nitrosaminoguanilydene hydrazine (dry).	Forbidden							73
UN0113	Guanyl nitrosaminoguanilydene hydrazine, wetted with not less than 30 percent water, by mass.	1.1A	II	1.1A	None	62	None	Forbidden	12
	Guanyl nitrosaminoguanilytetrazene (dry).	Forbidden							
UN0114	Guanyl nitrosaminoguanilytetrazene, wetted or Tetrazene, wetted with not less than 30 percent water or mixture of alcohol and water, by mass.	1.1A	II	1.1A	None	62	None	Forbidden	12
	Gunpowder, compressed or Gunpowder in pellets, see Black powder (UN 0029).								
	Gunpowder, granular or as a meal, see Black powder (UN 0027).								
UN2545	Hafnium powder, dry	4.2	I	4.2	242	211	242	Forbidden	D
			II	4.2	241	212	241	50 kg	D
UN1326	Hafnium powder, wetted with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns.	4.1	III	4.2	241	213	241	25 kg	D
	Hand signal device, see Signal devices, hand.		II	4.1	241	212	241	15 kg	E
	Hazardous substances, liquid or solid, n.o.s., see Environmentally hazardous substances, etc.								
NA3082	Hazardous waste, liquid, n.o.s.	9	III	9	241	203	241	No limit	A
NA3077	Hazardous waste, liquid, n.o.s.	9	III	9	240	213	240	No limit	A
UN1202	Heating oil, light	3	III	3	242	203	242	60 L	A

D G

D G

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Helium, compressed	2.2	UN1046		2.2		306	302	302, 314	75 kg	150 kg	A	85
	Helium, refrigerated liquid (cryogenic liquid)	2.2	UN1963		2.2	T75, TP5	320	316	318	50 kg	500 kg	B	
	Heptafluoropropane or Refrigerant gas R 227.	2.2	UN3296		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	n-Heptaldehyde	3	UN3056	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Heptanes	3	UN1206	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	n-Heptene	3	UN2278	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Hexachloroacetone	6.1	UN2661	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	B	12, 40
	Hexachlorobenzene	6.1	UN2729	III	6.1	B3, IB8, IP3, T1, TP33	153	203	241	60 L	220 L	A	
	Hexachlorobutadiene	6.1	UN2729	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Hexachlorocyclopentadiene	6.1	UN2646	I	6.1	2, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Hexachlorophene	6.1	UN2875	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Hexaacyltrichlorosilane	8	UN1781	II	8	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	30 L	C	40
	Hexadienes	3	UN2458	II	3	IB2, T4, TP1	None	202	242	5 L	60 L	B	
	Hexaethyl tetraphosphate and compressed gas mixtures.	2.3	UN1612	II	2.3	3	None	334	None	Forbidden	Forbidden	D	40
	Hexaethyl tetraphosphate, liquid	6.1	UN1611	II	6.1	IB2, N76, T7, TP2	153	202	243	5 L	60 L	E	40
	Hexaethyl tetraphosphate, solid	6.1	UN1611	II	6.1	IB8, IP2, IP4, N76	153	212	242	25 kg	100 kg	E	40
	Hexafluoroacetone	2.3	UN2420		2.3, 8	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
	Hexafluoroacetone hydrate, liquid	6.1	UN2552	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	40
	Hexafluoroacetone hydrate, solid	6.1	UN3436	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
	Hexafluoroethane, or Refrigerant gas R 116.	2.2	UN2193		2.2		306	304	314, 315	75 kg	150 kg	A	
	Hexafluorophosphoric acid	8	UN1782	II	8	A6, A7, B2, IB2, N3, N34, T8, TP2	None	202	242	1 L	30 L	A	
	Hexafluoropropylene compressed or Refrigerant gas R 1216.	2.2	UN1858		2.2		306	304	314, 315	75 kg	150 kg	A	
	Hexaldehyde	3	UN1207	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Hexamethylene diisocyanate	6.1	UN2281	II	6.1	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	C	13, 40
	Hexamethylene triperoxide diamine (dry)	Forbidden											
	Hexamethylenediamine, solid	8	UN2280	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12

Hexamethylenediamine solution	8	UN1783	II	8	IB2, T7, TP2	None	202	242	1 L	30 L	A	.....
Hexamethylenimine	3	UN2493	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
Hexamethylenetetramine	4.1	UN1328	III	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
Hexamethylol benzene hexanitrate	Forbidden		III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	.....
Hexanes	3	UN1208	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	.....
2,2,4,4',6,6'-Hexanitro-3,3'-dihydroxyazobenzene (dry)	Forbidden											
Hexanitroazoxy benzene	Forbidden											
N,N'-(hexanitrodiphenyl) ethylene dinitramine (dry)	Forbidden											
Hexanitrodiphenyl urea	Forbidden											
2,2',3',4',4',6'-Hexanitrodiphenylamine or Dipicrylamine or Hexyl	1.1D	UN0079	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
2,3',4',4',6,6'-Hexanitrodiphenylether	Forbidden											
Hexanitroethane	Forbidden											
Hexanitrooxanilide	Forbidden											
Hexanitrosilbene	1.1D	UN0392	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
Hexanoic acid, see Corrosive liquids, n.o.s.												
Hexanol	3	UN2282	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	74
1-Hexene	3	UN2370	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	.....
Hexogen												
Hexogen and octogen mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
Hexogen and HMX mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
Hexogen, see Cyclotrimethylenetrinitramine, etc.												
Hexolite, or Hexolol dry or wetted with less than 15 percent water, by mass	1.1D	UN0118	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
Hexotonal	1.1D	UN0393	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
Hexyl, see Hexanitrodiphenylamine												
Hexyltrichlorosilane	8	UN1784	II	8	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	Forbidden	C	40
High explosives, see individual explosives' entries												
HMX, see Cyclotetramethylenetetranitramine, etc.												

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/air-craft only (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
	Hydrazine, anhydrous	8	UN2029	I	8, 3, 6.1	A3, A6, A7, A10, B7, B16, B53	None	201	243	Forbidden	2.5 L	D	40, 52, 125, 52.
	Hydrazine, aqueous solution, with not more than 37 percent hydrazine, by mass.	6.1	UN3293	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Hydrazine aqueous solution, with more than 37% hydrazine, by mass.	8	UN2030	I	8, 6.1	B16, B53, T10, TP2, TP13	None	201	243	Forbidden	2.5 L	D	40, 52
	Hydrazine azide	Forbidden		II	8, 6.1	B16, B53, IB2, T7, TP2, TP13	None	202	243	Forbidden	30 L	D	40, 52
	Hydrazine chlorate	Forbidden		III	8, 6.1	B16, B53, IB3, T4, TP1	154	203	241	5 L	60 L	D	40, 52
	Hydrazine dicarbonic acid diazide	Forbidden		II	8, 6.1	B16, B53, IB2, T7, TP2, TP13	None	202	243	Forbidden	30 L	D	40
	Hydrazine perchlorate	Forbidden		III	8, 6.1	B16, B53, IB3, T4, TP1	154	203	241	5 L	60 L	D	40
	Hydrazine selenate	Forbidden											
	Hydroic acid, anhydrous, see Hydrogen iodide, anhydrous.												
	Hydroic acid	8	UN1787	II	8	A3, A6, B2, IB2, N41, T7, TP2	154	202	242	1 L	30 L	C	
	Hydrobromic acid, anhydrous, see Hydrogen bromide, anhydrous.												
	Hydrobromic acid, with more than 49 percent hydrobromic acid.	8	UN1788	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	C	8
	Hydrobromic acid, with not more than 49 percent hydrobromic acid.	8	UN1788	II	8	B2, B15, IB2, N41, T7, TP2	154	202	242	Forbidden	Forbidden	C	
	Hydrocarbon gas mixture, com-pressed, n.o.s.	2.1	UN1964	III	2.1	A3, A6, B2, B15, IB2, N41, T7, TP2	154	203	241	5 L	60 L	C	8
	Hydrocarbon gas mixture, liquefied, n.o.s.	2.1	UN1965		2.1	A3, IB3, T4, TP1	306	302	314, 315	Forbidden	150 kg	E	40
	Hydrocarbons, liquid, n.o.s.	3	UN3295	I	3	144, T11, TP1, TP8, TP28	150	201	243	1 L	30 L	E	

.....
.....
Hydrochloric acid, anhydrous, see Hydrogen chloride, anhydrous.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrochloric acid, aqueous solutions with not more than 20 percent hydrogen cyanide, see Hydrogen cyanide etc.	8	UN1789	II	8	.....	A3, A6, B3, B15, IB2, N41, T8, TP2	154	202	242	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrocyanic acid, aqueous solutions or Hydrogen cyanide, aqueous solutions with not more than 20 percent hydrogen cyanide.	.....	.....	.....	.....	.....	A3, IB3, T4, TP1	154	203	241	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrocyanic acid, aqueous solutions with less than 5 percent hydrogen cyanide.	6.1	UN1613	I	6.1	.....	2, B61, B65, B77, B82, T20, TP2, TP13	None	195	244	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrocyanic acid, liquefied, see Hydrogen cyanide, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrocyanic acid (prussic), unstabilized.	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrofluoric acid and Sulfuric acid mixtures.	8	UN1786	I	8, 6.1	.....	A6, A7, B15, B23, N5, N34, T10, TP2, TP13	None	201	243	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrofluoric acid, anhydrous, see Hydrogen fluoride, anhydrous.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrofluoric acid, with more than 60 percent strength.	8	UN1790	I	8, 6.1	.....	A6, A7, B4, B15, B23, N5, N34, T10, TP2, TP13	None	201	243	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrofluoric acid, with not more than 60 percent strength.	8	UN1790	II	8, 6.1	.....	A6, A7, B15, IB2, N5, N34, T8, TP2	154	202	243	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrofluoroboric acid, see Fluoroboric acid.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrofluorosilicic acid, see Fluorosilicic acid.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrogen and Methane mixtures, compressed.	2.1	UN2034	.....	2.1	.....	N89	306	302	302, 314, 315,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrogen bromide, anhydrous	2.3	UN1048	.....	2.3, 8	.....	3, B14, N86, N89	None	304	314,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrogen chloride, anhydrous	2.3	UN1050	.....	2.3, 8	.....	3, N86, N89	None	304	None	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrogen chloride, refrigerated liquid	2.3	UN2186	.....	2.3, 8	.....	3, B6	None	None	314,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrogen, compressed	2.1	UN1049	.....	2.1	.....	N89	306	302	302,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrogen cyanide, solution in alcohol with not more than 45 percent hydrogen cyanide.	6.1	UN3294	I	6.1, 3	.....	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hydrogen cyanide, stabilized with less than 3 percent water.	6.1	UN1051	I	6.1, 3	.....	1, B35, B61, B65, B77, B82	None	195	244	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
(1)	Hydrogen cyanide, stabilized, with less than 3 percent water and absorbed in a porous inert material. Hydrogen fluoride, anhydrous	6.1	UN1614	I	6.1	5	None	195	None	Forbidden	Forbidden	D	25, 40
		8	UN1052	I	8.6.1	3, B7, B46, B77, N86, T10, TP2	None	163	244	Forbidden	Forbidden	D	40
(1)	Hydrogen in a metal hydride storage system or Hydrogen in a metal hydride storage system contained in equipment or Hydrogen in a metal hydride storage system packed with equipment. Hydrogen iodide, anhydrous	2.1	UN3468	.....	2.1	167	None	214	None	Forbidden	100 kg gross	D	
		2.3	UN2197	2.3, 8	3, B14, N86, N89	None	304	314, 315	Forbidden	Forbidden	D	40	
(1)	Hydrogen iodide solution, see Hydroiodic acid. Hydrogen difluoride, solid, n.o.s.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		8	UN1740	III	8	IB8, IP3, N3, N34, T1, TP33	154	213	240	25 kg	100 kg	A	25, 40, 52
(1)	Hydrogen difluoride solution, n.o.s.	8	UN3471	III	8	IB8, IP2, IP4, N3, N34, T3, TP33	None	212	240	15 kg	50 kg	A	25, 40, 52
		8	UN3471	II	8, 6.1	IB8, IP3, N3, N34, T1, TP33	154	213	240	25 kg	100 kg	A	25, 40, 52
(1)	Hydrogen peroxide and peroxyacetic acid mixtures, stabilized with acids, water, and not more than 5 percent peroxyacetic acid. Hydrogen peroxide, aqueous solutions with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary).	5.1	UN3149	III	5.1, 8	145, A2, A3, A6, B53, IB2, IP5, T7, TP2, TP6, TP24	None	202	243	1 L	30 L	A	25, 40, 52
		5.1	UN2014	II	5.1, 8	12, A60, B53, B80, B81, B85, IB2, IP5, T7, TP2, TP6, TP24, TP37	None	202	243	Forbidden	Forbidden	D	25, 66, 75

	5.1	UN2014	II	5.1, 8		None ...	202 ...	243 ...	1 L	5 L	D	25, 66, 75.
Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary).	5.1	UN2984	III	5.1	A2, A3, A6, B53, IB2, IP5, T7, TP2, TP6, TP24, TP37	None		243	1 L	5 L	D	25, 66, 75.
Hydrogen peroxide, aqueous solutions with not less than 8 percent but less than 20 percent hydrogen peroxide (stabilized as necessary).	5.1	UN2015	I	5.1, 8	A1, IB2, IP5, T4, TP1, TP6, TP24, TP37	152	203	241	2.5 L	30 L	B	25, 66, 75.
Hydrogen peroxide, stabilized or Hydrogen peroxide aqueous solutions, stabilized with more than 60 percent hydrogen peroxide.	2.1	UN1966		2.1	12, B53, B80, B81, B85, T9, TP2, TP6, TP24, TP37	None	201	243	Forbidden	Forbidden	D	25, 66, 75.
Hydrogen, refrigerated liquid (cryogenic liquid).	2.1	UN1966		2.1	T75, TP5	None	316	318, 319, 319	Forbidden	Forbidden	D	40
Hydrogen sulfide, see Sulfuric acid	2.3	UN2202		2.3, 2.1	1	None	192	245	Forbidden	Forbidden	D	40
Hydrogen selenide, anhydrous	2.3	UN1053		2.3, 2.1	2, B9, B14, N89	None	304	314, 315	Forbidden	Forbidden	D	40
Hydroxylamine acid, see Fluorosilicic acid.												
1-Hydroxybenzotriazole, anhydrous, dry or wetted with less than 20 percent water, by mass.	1.3C	UN0508		1.3C		None	62	None	Forbidden	Forbidden	10	
1-Hydroxybenzotriazole, anhydrous, wetted with not less than 20 percent water, by mass.	4.1	UN3474	I	4.1	162, N90	None	211	None	0.5 kg	0.5 kg	D	28, 36
Hydroxylamine iodide	Forbidden											
Hydroxylamine sulfate	8	UN2865	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
Hypochlorite solutions	8	UN1791	II	8	A7, B2, B15, IB2, IP5, N34, T7, TP2, TP24	154	202	242	1 L	30 L	B	26
	5.1	UN3212	III	8	IB3, N34, T4, TP2, TP24	154	203	241	5 L	60 L	B	26
	5.1	UN3212	II	5.1	A9, IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	D	4, 48, 52, 56, 58, 69, 106, 116, 118
Hypochlorites, inorganic, n.o.s.												
Hyponitrous acid	Forbidden											
Igniter fuse, metal clad, see Fuse, igniter, tubular, metal clad.												
Igniters	1.1G	UN0121	II	1.1G		None	62	None	Forbidden	Forbidden	07	
Igniters	1.2G	UN0314	II	1.2G		None	62	None	Forbidden	Forbidden	07	
Igniters	1.3G	UN0315	II	1.3G		None	62	None	Forbidden	Forbidden	07	
Igniters	1.4G	UN0325	II	1.4G		None	62	None	Forbidden	Forbidden	06	
Igniters	1.4S	UN0454	II	1.4S		None	62	None	Forbidden	Forbidden	05	
3,3'-Iminodipropylamine	8	UN2269	III	8	IB3, T4, TP2	154	203	241	25 kg	100 kg	A	
Infectious substances, affecting animals only.	6.2	UN2900		6.2	A82	134	196	None	50 mL or 50 g	4 L or 4 kg	B	40

G

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
G	Infectious substances, affecting hu- mans. <i>Inflammable, see Flammable</i> <i>Initiating explosives (dry)</i> <i>Inositol hexanitrate (dry)</i>	6.2 Forbidden Forbidden	UN 2814 UN1968		6.2	A82	134	196	None	50 mL or 50 g	4 L or 4 kg	B	40
G	Insecticide gases, n.o.s.	2.2	UN1968		2.2		306	304	314, 315	75 kg	150 kg	A	
G	Insecticide gases, flammable, n.o.s.	2.1	UN3354		2.1	T50	306	304	314, 315	Forbidden	150 kg	D	40
G	Insecticide gases, toxic, flammable, n.o.s. <i>Inhalation hazard Zone A.</i>	2.3	UN3355		2.3, 2.1	1	None	192	245	Forbidden	Forbidden	D	40
G	Insecticide gases, toxic, flammable, n.o.s. <i>Inhalation hazard Zone B.</i>	2.3	UN3355		2.3, 2.1	2, B9, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40
G	Insecticide gases, toxic, flammable, n.o.s. <i>Inhalation hazard Zone C.</i>	2.3	UN3355		2.3	3, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	
G	Insecticide gases, toxic, flammable, n.o.s. <i>Inhalation hazard Zone D.</i>	2.3	UN3355		2.3, 2.1	4	None	302, 305	314, 315	Forbidden	Forbidden	D	
G	Insecticide gases, toxic, n.o.s.	2.3	UN1967		2.3	3	None	193, 334	245	Forbidden	Forbidden	D	40
	<i>Inulin trinitrate (dry)</i>	Forbidden											
	<i>Iodine azide (dry)</i>	Forbidden											
	<i>Iodine monochloride</i>	8	UN1792	II	8	B6, IB8, IP2, IP4, N41, T7, TP2	None	212	240	Forbidden	50 kg	D	40, 66, 74, 89, 90
	<i>Iodine pentafluoride</i>	5.1	UN2495	I	5.1, 6.1, 8		None	205	243	Forbidden	Forbidden	D	25, 40, 52, 66, 90
	<i>2-Iodobutane</i>	3	UN2390	II	3		150	202	242	5 L	60 L	B	
	<i>Iodomethylpropanes</i>	3	UN2391	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>Iodopropanes</i>	3	UN2392	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	<i>Iodoxy compounds (dry)</i>	Forbidden											
	<i>Iridium nitriopentamine iridium ni- trate.</i>	Forbidden											
	<i>Iron chloride, see Ferric chloride</i>												
	<i>Iron oxide, spent, or iron sponge, spent obtained from coal gas puri- fication.</i>	4.2	UN1376	III	4.2	B18, IB8, IP3, T1, TP33	None	213	240	Forbidden	Forbidden	E	

UN number	Proper shipping name	Hazard class	Packaging group	Labels	Quantity	Special provisions	Forbidden	Forbidden	Forbidden	Quantity	Special provisions	Forbidden	Forbidden	Quantity	Special provisions
6.1	UN1994	I	6.1, 3	1, B9, B14, B30, B77, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	40					
2.1	UN1969	III	2.1	19, T50	306	304	314, 315, 242	Forbidden	150 kg E	40					
3	UN1212	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A						
3	UN1213	II	3	IB2, T4, TP1	150	202	242	5 L	60 L B						
3	UN2527	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A						
6.1	NA2742	I	6.1, 3, 8	2, B9, B14, B32, B74, T20, TP4, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	12, 13, 22, 25, 40, 48, 100					
3	UN2393	II	3	IB2, T4, TP1	150	202	242	5 L	60 L B						
3	UN2528	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A						
3	UN2486	I	3, 6.1	1, B9, B14, B30, T22, TP2, TP13, TP27	None	226	244	Forbidden	Forbidden	40					
3	UN2283	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A						
3	UN2394	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L B						
3	UN1214	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L B	40					
2.1	UN1055	.....	2.1	19, T50	306	304	314, 315, 242	Forbidden	150 kg E	40					
3	UN2045	II	3	IB2, T4, TP1	150	202	242	5 L	60 L E	40					
3	UN2529	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L A						
3	UN2284	II	3, 6.1	IB2, T7, TP2, TP13	150	202	243	1 L	60 L E	40					
3	UN2395	II	3, 8	IB1, T7, TP2	150	202	243	1 L	5 L C	40					
3	UN2478	II	3, 6.1	5, A3, A7, IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L D	40					
6.1	UN3080	III	3, 6.1	5, A3, A7, IB3, T7, TP1, TP13, TP28	150	203	242	60 L	220 L A						
6.1	UN2206	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L B	25, 40, 48					
6.1	UN2206	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L E	25, 40, 48					

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
												
	Isocyanatobenzotrifluorides	6.1	UN2285	III	6.1	IB3, T7, TP1, TP13, TP28	153	203	241	60 L	220 L	E	25, 40, 48
	Isobutenes	3	UN2287	II	6.1, 3	5, IB2, T7, TP2	153	202	243	5 L	60 L	D	25, 40, 48
	Isobutenes	3	UN2288	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isocitranes, see Octanes	3	UN2288	II	3	IB2, IP8, T11, TP1	150	202	242	5 L	60 L	E	.....
	Isocitranes, see Octanes	3	UN2288	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopentane, see Pentane	3	UN1216	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopentanoic acid, see Corrosive liq-uids, n.o.s. ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Isopentanes	3	UN2371	I	3	T11, TP2	150	201	243	1 L	30 L	E	.....
	Isophorone dithiocyanate	6.1	UN2290	III	6.1	IB3, T4, TP2	153	203	241	60 L	220 L	B	40
	Isophoronediamine	8	UN2289	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	Isoprene, stabilized	3	UN1218	I	3	T11, TP2	150	201	243	1 L	30 L	E	.....
	Isopropanol or Isopropyl alcohol	3	UN1219	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropenyl acetate	3	UN2403	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropenylbenzene	3	UN2303	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isopropyl acetate	3	UN1220	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropyl acid phosphate	8	UN1793	III	8	IB2, T4, TP1	154	213	240	25 kg	100 kg	A	.....
	Isopropyl alcohol, see Isopropanol	3	UN2405	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isopropyl butyrate	3	UN2947	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isopropyl chloroacetate	6.1	UN2407	I	6.1, 3, 8	2, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	B	40
	Isopropyl chloroformate	6.1	UN2407	I	6.1, 3, 8	2, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	B	40
	Isopropyl 2-chloropropionate	3	UN2934	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isopropyl isobutyrate	3	UN2406	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropyl isocyanate	3	UN2483	I	3, 6.1	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
+	Isopropyl mercaptan, see Propanethiols .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Isopropyl nitrate	3	UN1222	II	3	IB9	150	202	None	5 L	60 L	D	.....
	Isopropyl phosphoric acid, see Iso-propyl acid phosphate	3	UN2409	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropyl propionate	3	UN1221	I	3, 8	T11, TP2	None	201	243	0.5 L	2.5 L	E	.....
	Isopropylamine	3	UN1918	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....

Isopropylcumyl hydroperoxide, with more than 72 percent in solution.													28, 36
Isosorbide dinitrate mixture with not less than 60 percent lactose, mannose, starch or calcium hydrogen phosphate.													12
Isosorbide-5-mononitrate	4.1	UN3251	III	4.1									
Isotiocyanic acid	ForbIDDEN												
Jet fuel, see Fuel aviation, turbine engine.													
Jet perforating guns, charged oil well, with detonator.	1.1D	NA0124	II	1.1D	55, 56	None	62	None	None				
Jet perforating guns, charged oil well, with detonator.	1.4D	NA0494	II	1.4D	55, 56	None	62	None	None				
Jet perforating guns, charged oil well, with detonator.	1.1D	UN0124	II	1.1D	55	None	62	None	None				
Jet perforating guns, charged, oil well, without detonator.	1.4D	UN0494	II	1.4D	55, 114	None	62	None	None				
Jet perforators, see Charges, shaped, etc.													
Jet tappers, without detonator, see Charges, shaped, etc.													
Jet thrust igniters, for rocket motors or Jato, see Igniters.													
Jet thrust unit (Jato), see Rocket motors.													
Kerosene	3	UN1223	III	3	144, B1, IB3, T2, TP2	150	203	242	60 L	220 L	A		
Ketones, liquid, n.o.s.	3	UN1224	I	3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E		
			III	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B		
			2.2	306, 307, 2.2	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A		
Krypton, compressed	2.2	UN1056	2.2	306, 307, 2.2	302	None	75 kg	150 kg	A				
Krypton, refrigerated liquid (cryogenic liquid).	2.2	UN1970			T75, TP5	320	None	None	50 kg	500 kg	B		
Lacquer base or lacquer chips, nitrocellulose dry, see Nitrocellulose, etc. (UN 2557).													
Lacquer base or lacquer chips, plastic, wet with alcohol or solvent, see Nitrocellulose (UN2059, UN2555, UN2556, UN2557) or Paint etc.(UN1263).	6.1	UN1616	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A		
Lead arsenates	6.1	UN1617	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A		
Lead arsenites	6.1	UN1618	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A		
Lead azide (dry)	ForbIDDEN												
Lead azide, wetted with not less than 20 percent water or mixture of alcohol and water, by mass.	1.1A	UN0129	II	1.1A	111, 117	None	62	None	ForbIDDEN	ForbIDDEN	12		
Lead compounds, soluble, n.o.s.	6.1	UN2291	III	6.1	138, IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A		

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	Lead cyanide	6.1	UN1620	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Lead dioxide	5.1	UN1872	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Lead dross, see Lead sulfate, with more than 3 percent free acid.												
	Lead nitrate	5.1	UN1469	II	5.1, 6.1.	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
	Lead nitrosorcinic acid (dry) Lead perchlorate, solid	Forbidden 5.1	UN1470	II	5.1, 6.1.	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Lead perchlorate, solution	5.1	UN3408	II	5.1, 6.1.	IB2, T4, TP1	152	202	243	1 L	5 L	A	56, 58
	Lead peroxide, see Lead dioxide												
	Lead phosphite, obasic	4.1	UN2989	II	4.1	IB8, IP2, IP4, T3, TP33	None	212	240	15 kg	50 kg	B	34.
	Lead picrate (dry)	Forbidden		III	4.1	IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	B	34.
	Lead styphinate (dry)	Forbidden		II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Lead styphinate, wetted or Lead trinitrosorcinic acid, wetted with not less than 20 percent water or mix- ture of alcohol and water, by mass.	1.1A	UN0130	II	1.1A								
	Lead sulfate with more than 3 per- cent free acid.	8	UN1794	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Lead trinitrosorcinic acid, see Lead styphinate, etc.												
	Life-saving appliances, not self inflat- ing containing dangerous goods as equipment.	9	UN3072		None		None	219	None	No limit	No limit	A	
	Life-saving appliances, self inflating	9	UN2990		None		None	219	None	No limit	No limit	A	
	Lighters containing flammable gas	2.1	UN1057		2.1	168	21,308	21,308	None	1 kg	15 kg	B	40
	Lighters, new or empty, purged of all residual fuel and vapors.					168							
	Lighters, non-pressurized, containing flammable liquid.	3	NA1057	II	3	168	21	None	None	Forbidden	Forbidden	B	40

	2.1	UN1057	2.1	169	306	306	None	1 kg	15 kg	B	40
Lighter refills containing flammable gas not exceeding 4 fluid ounces (7.22 cubic inches) and 65 grams of flammable gas.			2.1								
Lighter replacement cartridges containing liquefied petroleum gases see Lighter refills containing flammable gas. Etc.											
Lighters, fuse	1.4S	UN0131	II		None	62	None	25 kg	100 kg	05	
Lime, unslaked, see Calcium oxide											
Liquefied gas, flammable, n.o.s.	2.1	UN3161	2.1	T50	306	304	314, 315	Forbidden	150 kg	D	40
Liquefied gas, n.o.s.	2.2	UN3163	2.2	T50	306	304	314, 315	75 kg	150 kg	A	
Liquefied gas, oxidizing, n.o.s.	2.2	UN3157	2.2	A14	306	304	314, 315	75 kg	150 kg	D	
Liquefied gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone A.	2.3	UN3308	2.3, 8	1	None	192	245	Forbidden	Forbidden	D	40
Liquefied gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone B.	2.3	UN3308	2.3, 8	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
Liquefied gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone C.	2.3	UN3308	2.3, 8	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
Liquefied gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone D.	2.3	UN3308	2.3, 8	4	None	304	314, 315	Forbidden	Forbidden	D	40
Liquefied gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone A.	2.3	UN3309	2.3, 8	1	None	192	245	Forbidden	Forbidden	D	17, 40
Liquefied gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone B.	2.3	UN3309	2.3, 8	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	17, 40
Liquefied gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone C.	2.3	UN3309	2.3, 8	3, B14	None	304	314, 315	Forbidden	Forbidden	D	17, 40
Liquefied gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone D.	2.3	UN3309	2.3, 8	4	None	304	314, 315	Forbidden	Forbidden	D	17, 40
Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone A.	2.3	UN3160	2.3	1	None	192	245	Forbidden	Forbidden	D	40
Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone B.	2.3	UN3160	2.3	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone C.	2.3	UN3160	2.3	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone D.	2.3	UN3160	2.3	4	None	304	314, 315	Forbidden	Forbidden	D	40
Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone A.	2.3	UN3162	2.3	1	None	192	245	Forbidden	Forbidden	D	40
Liquefied gas, toxic, n.o.s. Inhalation Hazard Zone B.	2.3	UN3162	2.3	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
Liquefied gas, toxic, n.o.s. Inhalation Hazard Zone C.	2.3	UN3162	2.3	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$ 172.102)	(8) Packaging (\$ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10E)
G	Liquefied gas, toxic, n.o.s. <i>Inhalation Hazard Zone D.</i>	2.3	UN3162		2.3	4	None	304	314, 315	Forbidden	Forbidden	D	40
GI	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone A.</i>	2.3	UN3310		2.3, 5.1, 8	1	None	192	245	Forbidden	Forbidden	D	40, 89, 90
GI	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone B.</i>	2.3	UN3310		2.3, 5.1, 8	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40, 89, 90
GI	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone C.</i>	2.3	UN3310		2.3, 5.1, 8	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40, 89, 90
GI	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone D.</i>	2.3	UN3310		2.3, 5.1, 8	4	None	304	314, 315	Forbidden	Forbidden	D	40, 89, 90
G	Liquefied gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone A.</i>	2.3	UN3307		2.3	1	None	192	245	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone B.</i>	2.3	UN3307		2.3, 5.1	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone C.</i>	2.3	UN3307		2.3, 5.1	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone D.</i>	2.3	UN3307		2.3, 5.1	4	None	304	314, 315	Forbidden	Forbidden	D	40
	Liquefied gases, non-flammable charged with nitrogen, carbon dioxide or air.	2.2	UN1058		2.2		306	304	None	75 kg	150 kg	A	
	Liquefied hydrocarbon gas; see Hydrocarbon gas mixture, liquefied, n.o.s.												
	Liquefied natural gas, see Methane, etc. (UN 1972).												
	Liquefied petroleum gas see Petroleum gases, liquefied.												
	Lithium acetylide	4.3	UN1415	I	4.3	A7, A19, IB4, IP1, N45	None	211	244	Forbidden	Forbidden	E	52
	Lithium complex, see Water reactive solid etc.												
	Lithium aluminum hydride	4.3	UN1410	I	4.3	A2, A3, A11, N34	None	211	242	Forbidden	Forbidden	E	52
	Lithium aluminum hydride, ethereal	4.3	UN1411	I	4.3, 3		None	201	244	Forbidden	Forbidden	D	40

Lithium batteries, contained in equipment.	9	UN3091	II	9	29, 188, 189, 190, A54, A55, A101, A104	185	185	None	See A101, A104.	35 kg	A	.....
Lithium batteries packed with equipment.	9	UN3091	II	9	29, 188, 189, 190, A54, A55, A101, A103	185	185	None	See A101, A103.	35 kg gross	A	.....
Lithium battery	9	UN3090	II	9	29, 188, 189, 190, A54, A55, A100.	185	185	None	See A100	35 kg gross	A	.....
Lithium borohydride	4.3	UN1413	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Lithium ferrosilicon	4.3	UN2830	II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	40, 85, 103
Lithium hydride	4.3	UN1414	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Lithium hydride, fused solid	4.3	UN2805	II	4.3	A8, A19, A20, IB4, T3, TP33	151	212	241	15 kg	50 kg	E	52
Lithium hydroxide	8	UN2680	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
Lithium hydroxide, solution	8	UN2679	III	8	B2, IB2, T7, TP2, IB3, T4, TP2	154	202	242	1 L	30 L	A	29, 52.
Lithium hypochlorite, dry with more than 39% available chlorine (8.8% available oxygen) or Lithium hypochlorite mixtures, dry with more than 39% available chlorine (8.8% available oxygen).	5.1	UN1471	II	5.1	A9, IB8, IP2, IP4, N34	152	212	240	5 kg	25 kg	A	29, 52, 96, 4, 48, 52, 56, 58, 69, 106, 116
Lithium in cartridges, see Lithium												
Lithium nitrate	5.1	UN2722	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	.....
Lithium nitride	4.3	UN2806	I	4.3	A19, IB4, IP1, N40	None	211	242	Forbidden	15 kg	E	.....
Lithium peroxide	5.1	UN1472	II	5.1	A9, IB6, IP2, N34, T3, TP33	152	212	None	5 kg	25 kg	A	13, 52, 66, 75
Lithium silicon	4.3	UN1417	II	4.3	A19, A20, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	A	85, 103
LANG, see Methane etc. (UN 1972)												
London purple	6.1	UN1621	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
LPG, see Petroleum gases, liquefied												
Lye, see Sodium hydroxide, solutions												
Magnesium aluminum phosphide	4.3	UN1419	I	4.3, 6.1	A19, N34, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
Magnesium arsenate	6.1	UN1622	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Magnesium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.												
Magnesium bromate	5.1	UN1473	II	5.1	A1, IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Magnesium chlorate	5.1	UN2723	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Magnesium diamide	4.2	UN2004	II	4.2	A8, A19, A20, IB6, T3, TP33	None	212	241	15 kg	50 kg	C	.....
Magnesium dross, wet or hot	Forbidden											
Magnesium fluorosilicate	6.1	UN2853	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
Magnesium granules, coated, particle size not less than 149 microns.	4.3	UN2950	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	240	25 kg	100 kg	A	52
Magnesium hydride	4.3	UN2010	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52

+

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Magnesium or Magnesium alloys with more than 50 percent magnesium in pellets, turnings or ribbons.	4.1	UN1869	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	39, 52, 53, 74, 101
	Magnesium nitrate	5.1	UN1474	III	5.1	332, A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Magnesium perchlorate	5.1	UN1475	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Magnesium peroxide	5.1	UN1476	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 66, 75
	Magnesium phosphide	4.3	UN2011	I	4.3	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
	Magnesium, powder or Magnesium alloys, powder.	4.3	UN1418	I	4.3	A19, B56	None	211	244	Forbidden	15 kg	A	39, 52
	Magnesium scrap, see Magnesium, etc. (UN 1869).												
	Magnesium silicide	4.3	UN2624	II	4.3	A19, B56, IB5, IP2, T3, TP33	None	212	241	15 kg	50 kg	A	39, 52
	Magnetized material, see § 173.21												
	Maleic anhydride	8	UN2215	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Maleic anhydride, molten	8	UN2215	III	8	T4, TP3	None	213	240	Forbidden	Forbidden	A	
	Malonitrile	6.1	UN2647	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	12
	Mancozeb (manganese ethylenebis(dithiocarbamate) complex with zinc) see Maneb.												
	Maneb or Maneb preparations with not less than 60 percent maneb.	4.2	UN2210	III	4.2, 4.3	57, A1, A19, IB6, T1, TP33	None	213	242	25 kg	100 kg	A	34
	Maneb stabilized or Maneb preparations, stabilized against self-heat-ing.	4.3	UN2968	III	4.3	54, A1, A19, IB8, IP4, T1, TP33	151	213	242	25 kg	100 kg	B	34, 52
	Manganese nitrate	5.1	UN2724	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Manganese resinates	4.1	UN1330	III	4.1	A1, IB6, T1, TP33	151	213	240	25 kg	100 kg	A	
	Mannitan tetranitrate	Forbidden											
	Mannitol hexanitrate (dry)	Forbidden											

	1.1D	UN0133	II	1.1D ..	121	None ...	62	None	Forbidden	Forbidden	10	
Mannitol hexanitrate, wetted or Nitromannite, wetted with not less than 40 percent water, or mixture of alcohol and water, by mass.												
Merine pollutants, liquid or solid, n.o.s., see Environmentally hazardous substances, liquid or solid, n.o.s.												
Matches, block, see Matches, strike anywhere.												
Matches, fusee	4.1	UN2254	III	4.1		186	186	None	Forbidden	Forbidden	A	
Matches, safety (book, card or strike on box)	4.1	UN1944	III	4.1		186	186	None	25 kg	100 kg	A	
Matches, strike anywhere	4.1	UN1331	III	4.1		186	186	None	Forbidden	Forbidden	B	
Matches, wax, Vesta	4.1	UN1945	III	4.1		186	186	None	25 kg	100 kg	B	
Maffing acid, see Sulfuric acid												
Medicine, liquid, flammable, toxic, n.o.s.	3	UN3248	II	3, 6.1	IB2	150	202	None	1 L	5 L	B	40
Medicine, liquid, toxic, n.o.s.	6.1	UN1851	III	3, 6.1	IB3	150	203	None	5 L	5 L	A	
Medicine, solid, toxic, n.o.s.	6.1	UN3249	III	6.1	153	202	243	5 L	5 L	5 L	C	40
Meriteirahydrophtalic anhydride, see Corrosive liquids, n.o.s.												
Mercaptans, liquid, flammable, n.o.s. or Mercaptan mixture, liquid, flammable, n.o.s.	3	UN3336	I	3	T11, TP2	150	201	243	1 L	30 L	E	95
Mercaptans, liquid, flammable, toxic, n.o.s. or Mercaptan mixtures, liquid, flammable, toxic, n.o.s.	3	UN1228	II	3, 6.1	IB2, T7, TP1, TP8, TP28 B1, B52, IB3, T4, TP1, TP29	150	202	242	5 L	60 L	B	95
Mercaptans, liquid, toxic, flammable, n.o.s. or Mercaptan mixtures, liquid, toxic, flammable, n.o.s., flash point not less than 23 degrees C.	3	UN3071	III	3, 6.1	IB2, T11, TP2, TP27	150	203	241	60 L	220 L	B	95
Mercaptans, liquid, toxic, flammable, n.o.s. or Mercaptan mixtures, liquid, toxic, flammable, n.o.s., flash point not less than 23 degrees C.	6.1	UN3071	II	6.1, 3	A6, B1, IB3, T7, TP1, TP28	150	203	242	5 L	220 L	A	40, 95
5-Mercaptotetrazol-1-acetic acid	1.4C	UN0448	II	1.4C	A6, IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	C	40, 121
Mercuric arsenate	6.1	UN1623	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	Forbidden	75 kg	09	
Mercuric chloride	6.1	UN1624	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Mercuric compounds, see Mercury compounds, etc.												
Mercuric nitrate	6.1	UN1625	II	6.1	IB8, IP2, IP4, N73, T3, TP33	153	212	242	25 kg	100 kg	A	
Mercuric potassium cyanide	6.1	UN1626	I	6.1	IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	A	52

+

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Mercuric sulfocyanate, see Mercury thiocyanate.												
	Mercurol, see Mercury nucleate												
	Mercurous azide	Forbidden											
	Mercurous compounds, see Mercury compounds, etc.												
A W	Mercurous nitrate	6.1	UN1627	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Mercury	8	UN2809	III	8		164	164	240	35 kg	35 kg	B	40, 97
	Mercury acetate	6.1	UN1629	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Mercury acetylde	Forbidden											
	Mercury ammonium chloride	6.1	UN1630	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Mercury based pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	UN2778	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
	Mercury based pesticides, liquid, toxic.	6.1	UN3012	II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
				I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	Mercury based pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN3011	III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
				I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Mercury based pesticides, solid, toxic	6.1	UN2777	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Mercury benzoate	6.1	UN1631	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Mercury bromides	6.1	UN1634	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Mercury compounds, liquid, n.o.s.	6.1	UN2024	I	6.1	IB2, IP2, IP4, T3, TP33	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, IP2, IP4, T3, TP33	153	202	243	5 L	60 L	B	40
				III	6.1	IB7, IP1, T6, TP33	None	211	241	60 L	220 L	B	40
	Mercury compounds, solid, n.o.s.	6.1	UN2025	I	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				II	6.1	IB8, IP3, T1, TP33	153	213	240	25 kg	100 kg	A	
				III	6.1		153	213	240	100 kg	200 kg	A	

A	UN2809	8	UN2809	III	8	None	164	None	None	No limit	No limit	B	40, 97
Mercury contained in manufactured articles.	UN1636	6.1	UN1636	II	6.1	None	212	None	None	Forbiddn	Forbiddn	12	.....
Mercury cyanide	UN0135	1.1A	UN0135	II	1.1A	None	62	None	None	Forbiddn	Forbiddn	12	.....
Mercury fulminate, wetted with not less than 20 percent water, or mixture of alcohol and water, by mass.	UN1637	6.1	UN1637	II	6.1	153	212	242	242	25 kg	100 kg	A	.....
Mercury gluconate	UN1638	6.1	UN1638	II	6.1	153	212	242	242	25 kg	100 kg	A	.....
Mercury iodide	Forbiddn	Forbiddn	Forbiddn	II	6.1	.....	.....	.....	.....	.....	.....	.....	.....
Mercury iodide aquabasic ammonobasic (iodide of Millon's base).	Forbiddn	Forbiddn	Forbiddn	II	6.1	.....	.....	.....	.....	.....	.....	.....	.....
Mercury nitride	UN1639	6.1	UN1639	II	6.1	153	212	242	242	25 kg	100 kg	A	.....
Mercury nucleate	UN1640	6.1	UN1640	II	6.1	153	212	242	242	25 kg	100 kg	A	.....
Mercury oleate	UN1641	6.1	UN1641	II	6.1	153	212	242	242	25 kg	100 kg	A	.....
Mercury oxide	Forbiddn	Forbiddn	Forbiddn	II	6.1	.....	.....	.....	.....	.....	.....	.....	.....
Mercury oxycyanide	UN1642	6.1	UN1642	II	6.1	153	212	242	242	25 kg	100 kg	A	52, 91
Mercury cyanide, desensitized	UN1643	6.1	UN1643	II	6.1	153	212	242	242	25 kg	100 kg	A	.....
Mercury potassium iodide	UN1644	6.1	UN1644	II	6.1	153	212	242	242	25 kg	100 kg	A	.....
Mercury salicylate	UN1645	6.1	UN1645	II	6.1	153	212	242	242	25 kg	100 kg	A	.....
Mercury sulfates	UN1646	6.1	UN1646	II	6.1	153	212	242	242	25 kg	100 kg	A	.....
Mercury thiocyanate	UN1229	3	UN1229	III	3	150	203	242	242	60 L	220 L	A	.....
Mesityl oxide	UN3281	6.1	UN3281	I	6.1	None	201	201	243	1 L	30 L	B	40
Metal carbonyls, liquid, n.o.s.	.....	.....	.....	II	6.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	6.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	6.1	.....	.....	.....	.....	.....	.....	.....	.....
Metal carbonyls, solid, n.o.s.	UN3466	6.1	UN3466	I	6.1	None	202	243	243	5 L	60 L	B	40
.....	.....	.....	.....	II	6.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	II	6.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	6.1	.....	.....	.....	.....	.....	.....	.....	.....
Metal catalyst, dry	UN2881	4.2	UN2881	III	4.2	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	II	4.2	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	4.2	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	4.2	.....	.....	.....	.....	.....	.....	.....	.....
Metal catalyst, wetted with a visible excess of liquid	UN1378	4.2	UN1378	II	4.2	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	II	4.1	.....	.....	.....	.....	.....	.....	.....	.....
Metal hydrides, flammable, n.o.s.	UN3182	4.1	UN3182	II	4.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	4.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	I	4.3	.....	.....	.....	.....	.....	.....	.....	.....
Metal hydrides, water reactive, n.o.s.	UN1409	4.3	UN1409	II	4.3	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	II	4.3	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	II	4.2	.....	.....	.....	.....	.....	.....	.....	.....
Metal powder, self-heating, n.o.s.	UN3189	4.2	UN3189	II	4.2	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	4.2	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	4.2	.....	.....	.....	.....	.....	.....	.....	.....
Metal powders, flammable, n.o.s.	UN3089	4.1	UN3089	III	4.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	4.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	4.1	.....	.....	.....	.....	.....	.....	.....	.....
Metal salts of methyl nitramine (dry)	Forbiddn	Forbiddn	Forbiddn	III	4.1	.....	.....	.....	.....	.....	.....	.....	.....
Metal salts of organic compounds, flammable, n.o.s.	UN3181	4.1	UN3181	II	4.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	4.1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	III	4.1	.....	.....	.....	.....	.....	.....	.....	.....
Metaldehyde	UN1332	4.1	UN1332	III	4.1	.....	.....	.....	.....	.....	.....	.....	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi- cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
G	Metallic substance, water-reactive, n.o.s.	4.3	UN3208	I	4.3	A7, IB4	None	211	242	Forbidden	15 kg	E	40
				II	4.3	A7, IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	40
				III	4.3	A7, IB8, IP4, T1, TP33	151	241	241	25 kg	100 kg	E	40
G	Metallic substance, water-reactive, self-heating, n.o.s.	4.3	UN3209	I	4.3	A7	None	211	242	Forbidden	15 kg	E	40
				II	4.3	A7, IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	E	40
				III	4.3	A7, IB8, IP4, T1, TP33	None	213	242	25 kg	100 kg	E	40
				II	4.3	45, IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
				II	8	41, IB2, T7, TP1, TP18, TP30	154	202	242	1 L	30 L	C	40
+	Methacrylonitrile, stabilized	3	UN3079	I	3, 6.1	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	12, 40, 48
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
							306	302	302	Forbidden	150 kg	E	40
							None	None	318	Forbidden	Forbidden	D	40
+ I	Methane, compressed or Natural gas, compressed (with high meth- ane content).	2.1	UN1971		2.1	T75, TP5	None	None	318	Forbidden	Forbidden	D	40
D	Methane, refrigerated liquid (cryo- genic liquid) or Natural gas, refrigerated liquid (cryogenic liquid), with high methane content.	2.1	UN1972		2.1		None	None	318	Forbidden	Forbidden	D	40
	Methanesulfonyl chloride	6.1	UN3246	I	6.1, 8	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
				II	3, 6.1	IB2, T7, TP2	150	202	242	1 L	60 L	B	40
				II	3	IB2, T7, TP2	150	202	242	1 L	60 L	B	40
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
				I	3, 6.1	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
+	Methoxyethyl isocyanate	3	UN2605		3, 6.1		None	226	244	Forbidden	Forbidden	D	40
				II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
							306	304	314	Forbidden	150 kg	B	.....
							N88, T50	315	315	Forbidden	150 kg	B	.....

Methyl acrylate, stabilized	3	UN1919	II	3	IB2, T4, TP1, TP13	150	202	242	5 L	60 L B	40
Methyl alcohol, see Methanol											
Methyl allyl chloride	3	UN2554	II	3	IB2, T4, TP1, TP13	150	202	242	5 L	60 L E	40
Methyl amyl ketone, see Amyl methyl ketone											
Methyl bromide	2.3	UN1062		2.3	3, B14, N86, T50	None	193	314, 315	Forbidden	Forbidden D	40
Methyl bromide and chloropicrin mixtures with more than 2 percent chloropicrin, see Chloropicrin and methyl bromide mixtures											
Methyl bromide and chloropicrin mixtures with not more than 2 percent chloropicrin, see Methyl bromide											
Methyl bromide and ethylene dibromide mixtures, liquid	6.1	UN1647	I	6.1	2, B9, B14, B32, N65, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden C	40
Methyl bromoacetate	6.1	UN2643	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L D	40
2-Methylbutanal	3	UN3371	II	3	IB2, T4, TP1	150	202	242	5 L	60 L B	40
2-Methyl-1-butene	3	UN2459	II	3	T11, TP2	None	201	243	1 L	30 L E	
3-Methyl-2-butene	3	UN2460	II	3	IB2, IP8, T7, TP1	None	202	242	5 L	60 L E	
3-Methyl-1-butene	3	UN2561	II	3	T11, TP2	None	201	243	1 L	30 L E	
Methyl tert-butyl ether	3	UN2398	II	3	IB2, T7, TP1	150	202	242	5 L	60 L E	
Methyl butyrate	3	UN1237	II	3	IB2, T4, TP1	150	202	242	5 L	60 L B	
Methyl chloride or Refrigerant gas R 40	2.1	UN1063		2.1	N86, T50	306	304	314, 315	5 kg	100 kg D	40
Methyl chloride and chloropicrin mixtures, see Chloropicrin and methyl chloride mixtures											
Methyl chloride and methylene chloride mixtures	2.1	UN1912		2.1	N86, T50	306	304	314, 315	Forbidden	150 kg D	40
Methyl chloroacetate	6.1	UN2295	I	6.1, 3	T14, TP2, TP13	None	201	243	1 L	30 L D	
Methyl chloroacetate, see Methyl chloroformate											
Methyl chloroform, see 1,1,1-Trichloroethane											
Methyl chloroformate	6.1	UN1238	I	6.1, 3, 8	1, B9, B14, B30, N34, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden D	21, 40, 100
Methyl chloromethyl ether	6.1	UN1239	I	6.1, 3	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden D	40
Methyl 2-chloropropionate	3	UN2933	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A	
Methyl dichloroacetate	6.1	UN2299	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L A	
Methyl ethyl ether, see Ethyl methyl ether											
Methyl ethyl ketone, see Ethyl methyl ketone											
Methyl ethyl ketone peroxide, in solution with more than 9 percent by mass active oxygen	Forbidden										

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage		
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other	
D	2-Methyl-5-ethylpyridine	6.1	UN2300	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A		
	Methyl fluoride, or Refrigerant gas R 41.	2.1	UN2454		2.1		306	304	314, 315	Forbidden	150 kg	E	40	
	Methyl formate	3	UN1243	I	3	T11, TP2	150	201	243	1 L	30 L	E		
	2-Methyl-2-heptanethiol	6.1	UN3023	I	6.1, 3	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 102	
	Methyl iodide	6.1	UN2844	I	6.1	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 40	
	Methyl isobutyl carbinol	3	UN2053	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Methyl isobutyl ketone	3	UN1245	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Methyl isobutyl ketone peroxide, in solution with more than 9 percent by mass active oxygen.	Forbidden												
	Methyl isocyanate	6.1	UN2480	I	6.1, 3	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40, 52	
	Methyl isopropenyl ketone, stabilized	3	UN1246	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Methyl isothiocyanate	6.1	UN2477	I	6.1, 3	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A		
	Methyl isovalerate	3	UN2400	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Methyl magnesium bromide, in ethyl ether.	4.3	UN1928	I	4.3, 3		None	201	243	Forbidden	1 L	D		
	Methyl mercaptan	2.3	UN1064		2.3, 2.1	3, B7, B9, B14, N89, T50	None	304	314, 315	Forbidden	Forbidden	D	40	
	Methyl mercaptopropionaldehyde, see 4-Thiapentanal.													
Methyl methacrylate monomer, stabilized.	3	UN1247	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40		
Methyl nitramine (dry)	Forbidden													
Methyl nitrate	Forbidden													
Methyl nitrite	Forbidden													
Methyl norbornene dicarboxylic anhydride, see Corrosive liquids, n.o.s.	6.1	UN2806	I	6.1, 3	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	E	40		
Methyl orthosilicate	6.1	NA9206	I	6.1, 8	N43, T20, TP4, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C			

Methyl phosphonochloric dichloride, anhydrous, see Corrosive liquid, n.o.s.																					18
Methyl phosphonous dichloride, pyrophoric liquid.	6.1	NA2845	I	6.1, 4.2	2, B9, B14, B16, B32, B74, T20, TP4, TP13, TP38, TP45	None	227	244	ForbIDDEN	ForbIDDEN	ForbIDDEN	D									
Methyl picric acid (heavy metal salts of)	ForbIDDEN																				
Methyl propionate	3	UN1248	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B										
Methyl propyl ether	3	UN2612	II	3	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	40									
Methyl propyl ketone	3	UN1249	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B										
Methyl sulfate, see Dimethyl sulfate																					
Methyl sulfide, see Dimethyl sulfide																					
Methyl trichloroacetate	6.1	UN2533	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A										
Methyl trimethylol methane trinitrate	ForbIDDEN																				
Methyl vinyl ketone, stabilized	6.1	UN1251	I	6.1, 3, 8	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44	None	226	244	ForbIDDEN	ForbIDDEN	B	40									
Methylal	3	UN1234	II	3	IB2, IP8, T7, TP2	None	202	242	5 L	60 L	E	40									
Methylamine, anhydrous	2.1	UN1061		2.1	N87, T50	306	304	314, 315	ForbIDDEN	150 kg	B										
Methylamine, aqueous solution	3	UN1235	II	3, 8	B1, IB2, T7, TP1	150	202	243	1 L	5 L	E	52, 135									
Methylamine, dinitramine and dry salts thereof	ForbIDDEN																				
Methylamine nitroform	ForbIDDEN																				
Methylamine perchlorate (dry)	ForbIDDEN																				
Methylamyl acetate	3	UN1233	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A										
N-Methylamine	6.1	UN2294	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A										
alpha-Methylbenzyl alcohol, liquid	6.1	UN2937	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A										
alpha-Methylbenzyl alcohol, solid	6.1	UN3438	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A										
3-Methylbutan-2-one	3	UN2997	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B										
N-Methylbutylamine	3	UN2945	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40									
Methylchlorosilane	2.3	UN2534		2.3, 2.1, 8	2, B9, B14, N34	None	226	314, 315	ForbIDDEN	ForbIDDEN	D	17, 40									
Methylcyclohexane	3	UN2296	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B										
Methylcyclohexanol, flammable	3	UN2617	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A										
Methylcyclohexanone	3	UN2297	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A										
Methylcyclopentane	3	UN2298	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B										
Methyldichlorosilane	6.1	NA1556	I	6.1	2, T20, TP4, TP13, TP38, TP45	None	192	None	ForbIDDEN	ForbIDDEN	D	40									
Methyldichlorosilane	4.3	UN1242	I	4.3, 8, 3	A2, A3, A7, B6, B77, N34, T14, TP2, TP7, TP13	None	201	243	ForbIDDEN	1 L	D	21, 28, 40, 49, 100									
Methylene chloride, see Dichloromethane.																					
Methylene glycol dinitrate	ForbIDDEN																				
2-Methylfuran	3	UN2301	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E										
a-Methylglucoside tetranitrate	ForbIDDEN																				
a-Methylglycerol trinitrate	ForbIDDEN																				

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	5-Methylhexan-2-one Methylhydrazine	3 6.1	UN2302 UN1244	III I	3 6.1, 3, 8.	B1, IB3, T2, TP1 1, B7, B9, B14, B30, B77, N34, T22, TP2, TP13, TP38, TP44	150 None	203 226	242 244	60 L Forbidden	220 L Forbidden	A D	21, 40, 49, 52 and 100 40
	4-Methylmorpholine or methylmorpholine, Methylpentadienes 2-Methylpentan-2-ol Methylpentanes, see Hexanes Methylphenyldichlorosilane 1-Methylpiperidine Methyltetrahydrofuran Methyltrichlorosilane alpha-Methylvaleraldehyde Mine rescue equipment containing carbon dioxide, see Carbon diox- ide.	3 3 3 8 3 3 3 3	UN2535 UN2461 UN2560 UN2437 UN2399 UN2536 UN1250 UN2367	II II III II II II II II	3, 8 3 3 8 3, 8 3 3, 8 3	B6, IB2, T7, TP1 IB2, T4, TP1 B1, IB3, T2, TP1 T10, TP2, TP7, TP13 IB2, T7, TP1 IB2, T4, TP1 A7, B6, B77, N34, T10, TP2, TP7, TP13 B1, IB2, T4, TP1	150 150 150 None 150 202 206 202	202 203 203 206 202 206 206 202	243 242 242 242 243 243 243 243	1 L 5 L 60 L	5 L 60 L 220 L	B E A	40
	Mines with bursting charge Mines with bursting charge Mines with bursting charge Mines with bursting charge Mixed acid, see Nitrating acid, mix- tures etc. Mobility aids, see Battery powered equipment or Battery powered ve- hicle.	1.1F 1.1D 1.2D 1.2F	UN0136 UN0137 UN0138 UN0294	II II II II	1.1F 1.1D 1.2D 1.2F		62 62 62 62	None 62 62 62	None 62 62 None	Forbidden Forbidden Forbidden Forbidden	Forbidden Forbidden Forbidden Forbidden	08 03 03 08	
D D	Model rocket motor Model rocket motor Molybdenum pentachloride Monochloroacetone (unstabilized) Monochloroethylene, see Vinyl chlo- ride, stabilized. Monoethanolamine, see Ethanol- amine, solutions. Monoethylamine, see Ethylamine Morpholine	1.4C 1.4S Forbidden	NA0276 NA0323 UN2508	II II III	1.4C 1.4S 8	51 51 IB6, IP3, T1, TP33	None None 154	62 62 213	None None 240	Forbidden 25 kg 25 kg	75 kg 100 kg 100 kg	06 05 C	40
		8	UN2054	I	8, 3	A6, T10, TP2	None	201	243	0.5 L	2.5 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Nicotine hydrochloride, solid	6.1	UN3444	III	6.1	IB3	153	203	241	60 L	220 L	A	
	Nicotine salicylate	6.1	UN1657	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nicotine sulfate solution	6.1	UN1658	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nicotine sulphate, solid	6.1	UN3445	III	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Nicotine tartrate	6.1	UN1659	II	6.1	IB3, T7, TP2	153	203	241	60 L	220 L	A	
	Nitrated paper (unstable)	Forbidden				IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nitrates, inorganic, aqueous solution, n.o.s.	5.1	UN3218	II	5.1	58, IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
	Nitrates, inorganic, n.o.s.	5.1	UN1477	III	5.1	58, IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 133
	Nitrates of diazonium compounds	Forbidden				IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
	Nitraling acid mixtures, spent with more than 50 percent nitric acid.	8	UN1826	I	8, 5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Nitraling acid mixtures spent with not more than 50 percent nitric acid.	8	UN1796	II	8	A7, T10, TP2, TP13	None	158	243	Forbidden	2.5 L	D	40, 66
	Nitraling acid mixtures with more than 50 percent nitric acid.	8	UN1796	I	8, 5.1	A7, B2, IB2, T8, TP2	None	158	242	Forbidden	30 L	D	40
	Nitraling acid mixtures with not more than 50 percent nitric acid.	8	UN2031	II	8	A7, T10, TP2, TP13	None	158	243	Forbidden	2.5 L	D	40, 66
	Nitric acid other than red fuming, with at least 65 percent, but not more than 70 percent nitric acid.	8	UN2031	II	8, 5.1	A7, B2, IB2, T8, TP2, TP13	None	158	242	Forbidden	30 L	D	40
	Nitric acid, other than red fuming, with less than 65 percent nitric acid.	8	UN2031	I	8, 5.1	A6, B2, B47, B53, IB2, IP15, T8, TP2	None	158	242	Forbidden	30 L	D	66, 74, 89, 90
	Nitric acid other than red fuming, with more than 70 percent nitric acid.	8	UN2031	II	8	A3, B47, B53, T10, TP2, TP12, TP13	None	158	243	Forbidden	2.5 L	D	44, 66, 89, 90, 110, 111
	Nitric acid other than red fuming with not more than 20 percent nitric acid.	8	UN2031	II	8	A6, B2, B47, B53, IB2, T8, TP2	None	158	242	1 L	30 L	D	

+	Nitric acid, red fuming	8	UN2032	I	8, 5.1, 6.1	2, B8, B32, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 66, 74, 89, 90
	Nitric oxide, compressed	2.3	UN1660		2.3, 5.1, 8	1, B77	None	337	None	Forbidden	Forbidden	D	40, 89, 90
	Nitric oxide and dinitrogen tetroxide mixtures	2.3	UN1975		2.3, 5.1, 8	1, B77	None	337	None	Forbidden	Forbidden	D	40, 89, 90
G	Nitrites, flammable, toxic, n.o.s.	3	UN3273	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40, 52
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40, 52
G	Nitrites, toxic, flammable, n.o.s.	6.1	UN3275	I	6.1, 3	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40, 52
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40, 52
G	Nitrites, toxic, liquid, n.o.s.	6.1	UN3276	I	6.1	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	52
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	52
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	52
G	Nitrites, toxic, solid, n.o.s.	6.1	UN3439	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	D	52
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	240	25 kg	100 kg	B	52
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
				II	5.1	IB1, T4, TP1	152	202	242	1 L	5 L	B	46, 56, 58, 133
				III	5.1	IB2, T4, TP1	152	203	241	2.5 L	30 L	B	46, 56, 58, 133
				II	5.1	33, IB8, IP2, IP4, T3, TP33	152	212	None	5 kg	25 kg	A	46, 56, 58, 133
				II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
				II	1.1D		None	62	None	Forbidden	Forbidden	10	
+	Nitroamine	1.1D	UN0147	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Nitroaniline	6.1	UN1661	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nitroanilines (o-, m-, p-)	6.1	UN2730	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Nitroanisole, liquid	6.1	UN3458	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nitroanisoles, solid	6.1	UN1662	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
+	Nitrobenzene	6.1	UN1662	II	6.1		153	202	243			A	
	m-Nitrobenzene	6.1	UN1662	II	6.1		153	202	243			A	
	p-Nitrobenzene	6.1	UN1662	II	6.1		153	202	243			A	
	perchlorate	8	UN2305	II	8	B2, B4, IB8, IP2, IP4, T3, TP33	154	202	242	1 L	30 L	A	
	Nitrobenzenesulfonic acid	8	UN2305	II	8		154	202	242			A	
	Nitrobenzof, see Nitrobenzene												
	5-Nitrobenzotriazol	1.1D	UN0385	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Nitrobenzofluorides, liquid	6.1	UN2306	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Nitrobenzofluorides, solid	6.1	UN3431	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	Nitrobenzenes, liquid	6.1	UN2732	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	Nitrobenzenes, solid	6.1	UN3459	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nitrocellulose, dry or wetted with less than 25 percent water (or alcohol), by mass.	1.1D	UN0340	II	1.1D		None	62	None	Forbidden	Forbidden	13	27E
	Nitrocellulose, with not more than 12.6 percent, by dry mass mixture with or without plasticizer, with or without pigment.	4.1	UN2557	II	4.1	44	151	212	None	1 kg	15 kg	D	28, 36
	Nitrocellulose membrane filters, with not more than 12.6% nitrogen, by dry mass.	4.1	UN3270	II	4.1	43, A1	151	212	240	1 kg	15 kg	D	
	Nitrocellulose, plasticized with not less than 18 percent plasticizing substance, by mass.	1.3C	UN0343	II	1.3C		None	62	None	Forbidden	Forbidden	10	
	Nitrocellulose, solution, flammable with not more than 12.6 percent nitrogen, by mass, and not more than 55 percent nitrocellulose.	3	UN2059	I	3	198, T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E	
	Nitrocellulose, unmodified or plasticized with less than 18 percent plasticizing substance, by mass.	1.1D	UN0341	II	3	198, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
	Nitrocellulose, wetted with not less than 25 percent alcohol, by mass.	1.3C	UN0342	II	1.3C	198, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Nitrocellulose with alcohol with not less than 25 percent alcohol by mass, and with not more than 12.6 percent nitrogen, by dry mass.	4.1	UN2556	II	4.1	151	212	None	None	15 kg	Forbidden	13	27E
	Nitrocellulose with water with not less than 25 percent water by mass.	4.1	UN2555	II	4.1		151	212	None	50 kg	Forbidden	10	
	Nitrochlorobenzene, see Chloronitrobenzenes etc.												
	Nitroresols, liquid	6.1	UN3434	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Nitroresols, solid	6.1	UN2446	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nitroethane	3	UN2842	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Nitroethyl nitrate	Forbidden											
	Nitroethylene polymer	Forbidden											

	2.2	UN1066	2.2	2.2	306, 307	302	314, 315	75 kg	150 kg	A	
Nitrogen, compressed											
Nitrogen dioxide, see Dinitrogen tetroxide											
Nitrogen fertilizer solution, see Fertilizer ammoniating solution etc.											
Nitrogen peroxide, see Dinitrogen tetroxide											
Nitrogen, refrigerated liquid cryogenic liquid	2.2	UN1977	2.2	2.2	320	316	318	50 kg	500 kg	D	
Nitrogen tetroxide and nitric oxide mixtures, see Nitric oxide and nitrogen tetroxide mixtures											
Nitrogen tetroxide, see Dinitrogen tetroxide											
Nitrogen trichloride	Forbidden										
Nitrogen trifluoride	2.2	UN2451	2.2, 5.1	2.2, 5.1	None	302	None	75 kg	150 kg	D	40
Nitrogen triiodide	Forbidden										
Nitrogen triiodide monoamine	Forbidden										
Nitrogen trioxide	2.3	UN2421	2.3, 5.1, 8	2.3, 5.1, 8	None	336	245	Forbidden	Forbidden	D	40, 89, 90
Nitroglycerin, desensitized with not less than 40 percent non-volatile water insoluble pilegmatizer, by mass	1.1D	UN0143	II	1.1D, 6.1	None	62	None	Forbidden	Forbidden	13	21E
Nitroglycerin, liquid, not desensitized	Forbidden										
Nitroglycerin mixture, desensitized, liquid, flammable, n.o.s., with not more than 30 percent nitroglycerin, by mass	3	UN3343	3	3	None	214	None	Forbidden	Forbidden	D	
Nitroglycerin mixture, desensitized, liquid, n.o.s., with not more than 30% nitroglycerin, by mass	3	UN3357	II	3	None	202	243	5 L	60 L	E	
Nitroglycerin mixture, desensitized, solid, n.o.s., with more than 2 percent but not more than 10 percent nitroglycerin, by mass	4.1	UN3319	II	4.1	None	None	None	Forbidden	0.5 kg	E	
Nitroglycerin, solution in alcohol, with more than 1 percent but not more than 5 percent nitroglycerin	3	UN3064	II	3	None	202	None	Forbidden	5 L	E	
Nitroglycerin, solution in alcohol, with more than 1 percent but not more than 10 percent nitroglycerin	1.1D	UN0144	II	1.1D	None	62	None	Forbidden	Forbidden	10	21E
Nitroglycerin solution in alcohol with not more than 1 percent nitroglycerin	3	UN1204	II	3	150	202	None	5 L	60 L	B	
Nitroguanidine nitrate	Forbidden										

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	Nitroguanidine or Picrite, dry or wetted with less than 20 percent water, by mass.	1.1D	UN0282	II	1.1D ..		None ..	62	None	Forbidden	Forbidden	10	
	Nitroguanidine, wetted or Picrite, wetted with not less than 20 percent water, by mass.	4.1	UN1336	I	4.1	23, A8, A19, A20, N41	None ..	211	None	1 kg	15 kg	E	28, 36
	1-Nitrohydantoin	Forbidden											
	Nitrohydrochloric acid	8	UN1798	I	8	A3, B10, N41, T10, TP2, TP13	None ..	201	243	Forbidden	2.5 L	D	40, 66, 74, 89, 90
	Nitromannite (dry)	Forbidden											
	Nitromannite, wetted, see Mannitol hexanitrate, etc.												
	Nitromethane	3	UN1261	II	3		150	202	None	Forbidden	60 L	A	
	Nitromethane acid, see Nitrohydrochloric acid.												
	Nitronaphthalene	4.1	UN2538	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	
	Nitrophenols (o-; m-; p-)	6.1	UN1663	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	m-Nitrophenyldinitro methane	Forbidden											
	4-Nitrophenylhydrazine, with not less than 30 percent water, by mass.	4.1	UN3376	I	4.1	162, A8, A19, A20, N41	None ..	211	None	Forbidden	15 kg	E	28, 36
	Nitropropanes	3	UN2608	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	p-Nitrosodimethylaniline	4.2	UN1369	II	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None ..	212	241	15 kg	50 kg	D	34
	Nitrostarach, dry or wetted with less than 20 percent water, by mass.	1.1D	UN0146	II	1.1D ..		None ..	62	None	Forbidden	Forbidden	10	
	Nitrostarach, wetted with not less than 20 percent water, by mass.	4.1	UN1337	I	4.1	23, A8, A19, A20, N41	None ..	211	None	1 kg	15 kg	D	28, 36
	Nitrosugars (dry)	Forbidden											
	Nitrosyl chloride	2.3	UN1069		2.3, 8	3, B14	None ..	304	314	Forbidden	Forbidden	D	40
	Nitrosylsulfuric acid, liquid	8	UN2308	II	8	A3, A6, A7, B2, IB2, N34, T8, TP2	154	202	242	1 L	30 L	D	40, 66, 74, 89, 90
	Nitrosylsulphuric acid, solid	8	UN3456	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	D	40, 66, 74, 89, 90
	Nitrotoluenes, liquid	6.1	UN1664	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	

Nitroloenes, solid	6.1	UN3446	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
Nitroloenes (mono)	6.1	UN2660	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Nitrotriazolone or NTO	1.1D	UN0490	II	1.1D	None	None	62	None	Forbidden	Forbidden	10	40
Nitrous oxide	2.2	UN1070	II	2.2	A14	306	304	314, 315	75 kg	150 kg	A	40
Nitrous oxide, refrigerated liquid	2.2	UN2201	.....	5.1	B6, T75, TP5, TP22	None	304	314	Forbidden	Forbidden	B	40
Nitroxylene, liquid	6.1	UN1665	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
Nitroxylene, solid	6.1	UN3447	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
Nitroxy/ol, see Nitroxylene	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nonanes	3	UN1920	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
Non-flammable gas, n.o.s., see Compressed gas, etc. or Liquefied gas, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nonliquefied gases, see Compressed gases, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nonliquefied hydrocarbon gas, see Hydrocarbon gas mixture, compressed, n.o.s.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nonyltrichlorosilane	8	UN1799	II	8	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	30 L	C	40
Nordhausen acid, see Sulfuric acid, fuming etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2,5-Norbornadiene, stabilized, see Bicyclo [2,2,1] hept-2,5-diene, stabilized.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Octadecyltrichlorosilane	8	UN1800	II	8	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	30 L	C	40
Octadiene	3	UN2309	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	40
1,7-Octadine-3,5-diyne-1,8-dimethoxy-9-octadecyric acid.	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Octafluorobut-2-ene or Refrigerant gas R 1318.	2.2	UN2422	.....	2.2	None	None	304	314, 315	75 kg	150 kg	A	40
Octafluorocyclobutane, or Refrigerant gas RC 318.	2.2	UN1976	.....	2.2	T50	None	304	314, 315	75 kg	150 kg	A	40
Octafluoropropane or Refrigerant gas R 218.	2.2	UN2424	.....	2.2	T50	None	304	314, 315	75 kg	150 kg	A	40
Octenes	3	UN1262	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Octogen, etc. see Cyclotetramethylene tetranitramine, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Octoite or Octol, dry or wetted with less than 15 percent water, by mass.	1.1D	UN0266	II	1.1D	None	None	62	None	Forbidden	Forbidden	10	40
Octonal	1.1D	UN0496	.....	1.1D	None	None	62	None	Forbidden	Forbidden	10	40
Octyl aldehydes	3	UN1191	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
Octyltrichlorosilane	8	UN1801	II	8	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	242	Forbidden	30 L	C	40
Oil gas, compressed	2.3	UN1071	.....	2.3	None	None	304	314, 315	Forbidden	25 kg	D	40
	.....	.....	.....	2.1	.....	.....	.....	.....	.....	.....	.....	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage		
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)	
	<i>Oleum, see Sulfuric acid, fuming</i>	Forbidden												
	<i>Organic peroxide type A, liquid or solid.</i>	5.2	UN3101	II	5.2, 1		53	152	225	None	Forbidden	D	12, 40, 52, 53	
G	Organic peroxide type B, liquid	5.2	UN3111	II	5.2, 1		53	None	225	None	Forbidden	D	2, 40, 52, 53	
G	Organic peroxide type B, solid	5.2	UN3102	II	5.2, 1		53	152	225	None	Forbidden	D	12, 40, 52, 53	
G	Organic peroxide type B, solid, tem- perature controlled.	5.2	UN3112	II	5.2, 1		53	None	225	None	Forbidden	D	2, 40, 52, 53	
G	Organic peroxide type C, liquid	5.2	UN3103	II	5.2			152	225	None	5 L	10 L	D	12, 40, 52, 53
G	Organic peroxide type C, liquid, tem- perature controlled.	5.2	UN3113	II	5.2			None	225	None	Forbidden	D	2, 40, 52, 53	
G	Organic peroxide type C, solid	5.2	UN3104	II	5.2			152	225	None	5 kg	10 kg	D	12, 40, 52, 53
G	Organic peroxide type C, solid, tem- perature controlled.	5.2	UN3114	II	5.2			None	225	None	Forbidden	D	2, 40, 52, 53	
G	Organic peroxide type D, liquid	5.2	UN3105	II	5.2			152	225	None	5 L	10 L	D	12, 40, 52, 53
G	Organic peroxide type D, liquid, tem- perature controlled.	5.2	UN3115	II	5.2			None	225	None	Forbidden	D	2, 40, 52, 53	
G	Organic peroxide type D, solid	5.2	UN3106	II	5.2			152	225	None	5 kg	10 kg	D	12, 40, 52, 53
G	Organic peroxide type D, solid, tem- perature controlled.	5.2	UN3116	II	5.2			None	225	None	Forbidden	D	2, 40, 52, 53	
G	Organic peroxide type E, liquid	5.2	UN3107	II	5.2			152	225	None	10 L	25 L	D	12, 40, 52, 53
G	Organic peroxide type E, liquid, tem- perature controlled.	5.2	UN3117	II	5.2			None	225	None	Forbidden	D	2, 40, 52, 53	
G	Organic peroxide type E, solid	5.2	UN3108	II	5.2			152	225	None	10 kg	25 kg	D	12, 40, 52, 53
G	Organic peroxide type E, solid, tem- perature controlled.	5.2	UN3118	II	5.2			None	225	None	Forbidden	D	2, 40, 52, 53	
G	Organic peroxide type F, liquid	5.2	UN3109	II	5.2		IP5	152	225	225	10 L	25 L	D	12, 40, 52, 53

G	Organic peroxide type F, liquid, temperature controlled.	5.2	UN3119	II	5.2	IP5	None	225	225	225	ForbIDDEN	ForbIDDEN	D	2, 40, 52, 53					
G	Organic peroxide type F, solid	5.2	UN3110	II	5.2	TP33	152	225	225	10 kg	25 kg	D	12, 40, 52, 53						
G	Organic peroxide type F, solid, temperature controlled.	5.2	UN3120	II	5.2	TP33	None	225	225	ForbIDDEN	ForbIDDEN	D	2, 52, 53						
D	Organic phosphate, mixed with compressed gas or Organic phosphate compound, mixed with compressed gas	2.3	NA1955		2.3	3	None	334	None	ForbIDDEN	ForbIDDEN	D	53, 40						
G	Organic pigments, self-heating	4.2	UN3313	II	4.2	IB8, IP2, IP4, T3, TP33	None	212	241	15 kg	50 kg	C							
G	Organoarsenic compound, liquid, n.o.s.	6.1	UN3280	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	C							
G	Organoarsenic compound, solid, n.o.s.	6.1	UN3465	I	6.1	5, T14, TP2, TP13, TP27	None	201	242	1 L	30 L	B							
G	Organochlorine pesticides liquid, flammable, toxic, flash point less than 23 degrees C.	3	UN2762	I	6.1	IB2, T11, TP2, TP27	153	202	241	5 L	60 L	B							
G	Organochlorine pesticides, liquid, toxic.	6.1	UN2996	I	6.1	IB3, T7, TP1, TP28	153	203	242	5 kg	220 L	A							
G	Organochlorine pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN2995	I	6.1, 3	IB7, IP1, T6, TP33	None	201	243	5 kg	200 kg	A							
G	Organometallic compound, toxic, liquid, n.o.s.	6.1	UN3282	I	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A							
G	Organometallic compound, toxic, solid, n.o.s.	6.1	UN3467	III	6.1	T14, TP2, TP13, TP27	None	201	242	1 L	30 L	B							

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi- cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
G	Organometallic substance, liquid, pyrophoric.	4.2	UN3392	I	4.2	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	143
G	Organometallic substance, liquid, pyrophoric, water-reactive.	4.2	UN3394	I	4.2, 4.3	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	.....
G	Organometallic substance, liquid, water-reactive.	4.3	UN3398	I	4.3	T13, TP2, TP7	None	201	244	Forbidden	1 L	E	40, 52
G	Organometallic substance, liquid, water-reactive, flammable.	4.3	UN3399	II	4.3	IB1, T7, TP2, TP7	None	202	243	1 L	5 L	E	40, 52
G	Organometallic substance, solid, pyrophoric.	4.2	UN3391	III	4.3	IB2, T7, TP2, TP7	None	203	242	5 L	60 L	E	40, 52
G	Organometallic substance, solid, pyrophoric, water-reactive.	4.2	UN3393	I	4.2	T13, TP2, TP7	None	201	244	Forbidden	1 L	D	40, 52
G	Organometallic substance, solid, pyrophoric, water-reactive.	4.2	UN3399	II	4.3, 3	IB1, IP2, T7, TP2, TP7	None	202	243	1 L	5 L	D	40, 52
G	Organometallic substance, solid, self- heating.	4.2	UN3400	I	4.2	IB2, IP4, T7, TP2, TP7	None	203	242	5 L	60 L	E	40, 52
G	Organometallic substance, solid, water-reactive.	4.3	UN3395	III	4.2	T21, TP7, TP33	None	187	244	Forbidden	Forbidden	D	52.
G	Organometallic substance, solid, water-reactive.	4.3	UN3396	I	4.3	B11, T21, TP7, TP33	None	187	244	Forbidden	Forbidden	D	.....
G	Organometallic substance, solid, water-reactive, flammable.	4.3	UN3396	II	4.2	IB6, T3, TP33	None	212	242	15 kg	50 kg	C	.....
G	Organometallic substance, solid, water-reactive, flammable.	4.3	UN3396	III	4.3	IB8, T1, TP33	None	203	242	25 kg	100 kg	C	.....
G	Organometallic substance, solid, water-reactive, flammable.	4.3	UN3396	II	4.3	N40, T9, TP7, TP33	None	211	242	Forbidden	Forbidden	E	40, 52
G	Organometallic substance, solid, water-reactive, flammable.	4.3	UN3396	III	4.3	IB4, T3, TP33	151	212	242	15 kg	50 kg	E	40, 52
G	Organometallic substance, solid, water-reactive, flammable.	4.3	UN3396	III	4.3	IB6, T1, TP33	151	213	241	25 kg	100 kg	E	40, 52
G	Organometallic substance, solid, water-reactive, self-heating.	4.3	UN3397	I	4.2, 4.3	N40, T9, TP7, TP33	None	211	242	Forbidden	Forbidden	E	40, 52
G	Organometallic substance, solid, water-reactive, self-heating.	4.3	UN3397	II	4.3	IB4, T3, TP33	None	212	242	15 kg	50 kg	E	40, 52
G	Organometallic substance, solid, water-reactive, self-heating.	4.3	UN3397	III	4.3, 4.2	IB6, T1, TP33	None	213	241	25 kg	100 kg	E	40, 52
G	Organometallic substance, solid, water-reactive, self-heating.	4.3	UN3397	III	4.3, 4.2	IB4, T3, TP33	None	212	242	Forbidden	Forbidden	E	40, 52
G	Organometallic substance, solid, water-reactive, self-heating.	4.3	UN3397	III	4.3, 4.2	IB6, T1, TP33	None	213	241	25 kg	100 kg	E	40, 52
G	Organophosphorus compound, toxic, flammable, n.o.s.	6.1	UN3279	I	6.1, 3	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40

G	Organophosphorus compound, toxic, liquid, n.o.s.	6.1	UN3278	I	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L B	40
					6.1	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L B	
G	Organophosphorus compound, toxic, solid, n.o.s.	6.1	UN3464	II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L B	
					6.1	IB3, T7, TP1, TP28	153	203	241	60 L A	220 L A	
					6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg B	
					6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg B	
					6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg A	
					3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L B	40
					3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L B	40
					6.1	N76, T14, TP2, TP13, TP27	None	201	243	1 L	30 L B	40
					6.1	IB2, N76, T11, TP2, TP13, TP27	153	202	243	5 L	60 L B	40
					6.1	IB3, N76, T7, TP2, TP28	153	203	241	60 L	220 L A	40
					6.1, 3	N76, T14, TP2, TP13, TP27	None	201	243	1 L	30 L B	40
					6.1, 3	IB2, N76, T11, TP2, TP13, TP27	153	202	243	5 L	60 L B	40
					6.1, 3	B1, IB3, N76, T7, TP2, TP28	153	203	242	60 L	220 L A	40
					6.1	IB7, IP1, N77, T6, TP33	None	211	242	5 kg	50 kg A	40
					6.1	IB8, IP2, IP4, N77, T3, TP33	153	212	242	25 kg	100 kg A	40
					6.1	IB8, IP3, N77, T1, TP33	153	213	240	100 kg	200 kg A	40
					6.1	A3, N33, N34, T14, TP2, TP13, TP27	None	201	243	1 L	30 L B	40
					6.1	A3, IB2, N33, N34, T11, TP2, TP13, TP27	153	202	243	5 L	60 L A	40
					6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L A	40
					6.1	A5, IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg B	40
					6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg A	40
					6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg A	40
					3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L B	40
					3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L B	40
					6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L B	40
					6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L B	40
					6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L A	40
					6.1	Organotin pesticides, liquid, toxic	153	203	241	60 L	220 L A	40
					6.1	Organotin pesticides, liquid, toxic, flash point less than 23 degrees C.	153	203	241	60 L	220 L A	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi- cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
D G	Organotin pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C. Organotin pesticides, solid, toxic Orthonitroaniline, see Nitroanilines etc. Osmium tetroxide Other regulated substances, liquid, n.o.s. Other regulated substances, solid, n.o.s. Oxidizing liquid, corrosive, n.o.s.	6.1	UN3019	I	6.1, 3	T14, TP2, TP13, TP27	None ...	201 ...	243 ...	1 L	30 L	B	40
		6.1	UN2786	II	6.1, 3	IB2, T11, TP2, TP13, TP27	153 ...	202 ...	243 ...	5 L	60 L	B	40
		6.1		III	6.1, 3	B1, IB3, T7, TP2, TP28	153 ...	203 ...	242 ...	60 L	220 L	A	40
		6.1		I	6.1	IB7, IP1, T6, TP33	None ...	211 ...	242 ...	5 kg	50 kg	A	40
		6.1		II	6.1	IB8, IP2, IP4, T3, TP33	153 ...	212 ...	242 ...	25 kg	100 kg	A	40
		6.1		III	6.1	IB6, IP3, T1, TP33	153 ...	213 ...	240 ...	100 kg	200 kg	A	40
		6.1		I	6.1	A8, IB7, IP1, N33, N34, T6, TP33	None ...	211 ...	242 ...	5 kg	50 kg	B	40
		9	NA3082	III	9	IB3, T2, TP1	155 ...	203 ...	241 ...	No limit	No limit	A	.....
		9	NA3077	III	9	B54, IB8, IP2, T1, TP33	155 ...	213 ...	240 ...	No limit	No limit	A	.....
		5.1	UN3098	I	5.1, 8	62, A6	None ...	201 ...	244 ...	Forbidden	2.5 L	D	13, 56, 58, 106, 138
G	Oxidizing liquid, n.o.s.	5.1	UN3139	II	5.1, 8	62, IB1	None ...	202 ...	243 ...	1 L	5 L	B	13, 34, 56, 58, 106, 138
		5.1		III	5.1, 8	62, IB2	152 ...	203 ...	242 ...	2.5 L	B	13, 34, 56, 58, 106, 138	
		5.1		I	5.1	62, 127, A2, A6	None ...	201 ...	243 ...	Forbidden	D	56, 58, 106, 138	
5.1		II	5.1	62, 127, A2, IB2	152 ...	202 ...	242 ...	1 L	5 L	B	56, 58, 106, 138		
5.1		III	5.1	62, 127, A2, IB2	152 ...	203 ...	241 ...	2.5 L	30 L	B	56, 58, 106, 138		

G	Oxidizing liquid, toxic, n.o.s.	5.1	UN3099	I	5.1, 6.1.	62, A6	None	201	244	Forbiddn	2.5 L	D	56, 58, 106, 138
				II	5.1, 6.1.	62, IB1	152	202	243	1 L	5 L	B	56, 58, 95, 106, 138
				III	5.1, 6.1.	62, IB2	152	203	242	2.5 L	30 L	B	56, 58, 95, 106, 138
G	Oxidizing solid, corrosive, n.o.s.	5.1	UN3085	I	5.1, 8	62	None	211	242	1 kg	15 kg	D	13, 34, 56, 58, 106, 138
				II	5.1, 8	62, IB6, IP2, T3, TP33	None	212	242	5 kg	25 kg	B	13, 34, 56, 58, 106, 138
				III	5.1, 8	62, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	13, 34, 56, 58, 106, 138
G	Oxidizing solid, flammable, n.o.s.	5.1	UN3137	I	5.1, 4.1.	62	None	214	214	Forbiddn	Forbiddn		56, 58, 106, 138
G	Oxidizing solid, n.o.s.	5.1	UN1479	I	5.1	62, IB5, IP1	None	211	242	1 kg	15 kg	D	56, 58, 106, 138
				II	5.1	62, IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	B	56, 58, 106, 138
				III	5.1	62, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	56, 58, 106, 138
G	Oxidizing solid, self-heating, n.o.s.	5.1	UN3100	I	5.1, 4.2.	62	None	214	214	Forbiddn	Forbiddn		56, 58, 106, 138
				II	5.1, 4.2.	62	None	214	214	Forbiddn	Forbiddn		56, 58, 106, 138
G	Oxidizing solid, toxic, n.o.s.	5.1	UN3087	I	5.1, 6.1.	62	None	211	242	1 kg	15 kg	D	56, 58, 106, 138
				II	5.1, 6.1.	62, IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	B	56, 58, 95, 106, 138
				III	5.1, 6.1.	62, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	56, 58, 95, 106, 138

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
G	Oxidizing solid, water-reactive, n.o.s.	5.1	UN3121	5.1, 4.3	62	None	214	214	Forbidden	Forbidden			
	Oxygen, compressed	2.2	UN1072		2.2, 5.1	A14	306	302	314, 315	75 kg	150 kg	A	
	Oxygen difluoride, compressed	2.3	UN2190		2.3, 5.1, 8	1, N86	None	304	None	Forbidden	Forbidden	D	13, 40, 89, 90
	Oxygen generator, chemical (including when contained in associated equipment, e.g., passenger service units (PSUs), portable breathing equipment (PBE), etc).	5.1	UN3356	II	5.1		None	168	None	Forbidden	25 kg	D	56, 58, 69, 106
+	Oxygen generator, chemical, spent	9	NA3356	III	9	61	None	213	None	Forbidden	Forbidden	A	
	Oxygen, reingenerated liquid (cryogenic liquid).	2.2	UN1073		2.2, 5.1	T75, TP5, TP22	320	316	318	Forbidden	Forbidden	D	
	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler and liquid lacquer base.	3	UN1263	I	3	T11, TP1, TP8, TP27	150	201	243	1 L	30 L	E	
	Paint or Paint related material	8	UN3066	II	3	149, B52, IB2, T4, TP1, TP8, TP28	150	173	242	5 L	60 L	B	
	Paint related material including paint thinning, drying, removing, or reducing compound.	3	UN1263	III	3	B1, B52, IB3, T2, TP1, TP29	150	173	242	60 L	220 L	A	
		8	UN3066	II	8	B2, IB2, T7, TP2, TP28	154	173	242	1 L	30 L	A	40
		3	UN1263	III	3	B52, IB3, T4, TP1, TP29	154	173	241	5 L	60 L	A	40
		8	UN3470	II	8, 3	T11, TP1, TP8, TP27	150	201	243	1 L	30 L	E	
		8	UN3470	III	3	149, B52, IB2, T4, TP1, TP8, TP28	150	173	242	5 L	60 L	B	
	Paint, corrosive, flammable (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base).	8	UN3470	II	8, 3	B1, B52, IB3, T2, TP1, TP29	150	173	242	60 L	220 L	A	
		8	UN3470	II	8, 3	IB2, T7, TP2, TP8, TP28	154	202	243	1 L	30 L	B	40

	8	UN3470	II	8, 3	IB2, T7, TP2, TP8, TP28	154	202	243	1 L	30 L	B	40.
Paint related material corrosive, flammable (including paint thinning or reducing compound).	3	UN3469	I	3, 8	T11, TP2, TP27	None	201	243	0.5 L	2.5 L	E	40.
Paint, flammable, corrosive (including lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base).	4.2	UN1379	II	3, 8	IB2, T7, TP2, TP8, TP28	150	202	243	1 L	5 L	B	40.
Paper, unsaturated oil treated incompletely dried (including carbon paper)	4.1	UN2213	III	3, 8	IB3, T4, TP1, TP29	150	203	242	5 L	60 L	A	40.
Paraldehyde	3	UN1264	III	4.2	IB8, IP3	None	213	241	Forbidden	Forbidden	A	
Paranitroaniline, solid, see Nitroanilines etc.												
Paraffin and compressed gas mixture	2.3	NA1967		2.3	3	None	334	245	Forbidden	Forbidden	E	40
Paris green, solid, see Copper acetoarsenite.												
PCB, see Polychlorinated biphenyls												
Pentaborane	4.2	UN1380	I		1	None	205	245	Forbidden	Forbidden	D	
Pentachloroethane	6.1	UN1669	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
Pentachlorophenol	6.1	UN3155	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Pentaerythrite tetranitrate (dry)	Forbidden											
Pentaerythrite tetranitrate mixture, desensitized, solid, n.o.s. or Pentaerythritol tetranitrate mixture, desensitized, solid, n.o.s. or PETN mixture, desensitized, solid, n.o.s., with more than 10 percent but not more than 20 percent PETN, by mass.	4.1	UN3344	II	4.1	118, N85	None	214	None	Forbidden	Forbidden	E	
Pentaerythrite tetranitrate or Pentaerythritol tetranitrate or PETN, with not less than 7 percent wax by mass.	1.1D	UN0411	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Pentaerythrite tetranitrate, wetted or Pentaerythritol tetranitrate, wetted, or PETN, wetted with not less than 25 percent water, by mass, or Pentaerythrite tetranitrate, or Pentaerythritol tetranitrate or PETN, desensitized with not less than 15 percent phlegmatizer by mass.	1.1D	UN0150	II	1.1D	121	None	62	None	Forbidden	Forbidden	10	
Pentaerythritol tetranitrate, see Pentaerythrite tetranitrate, etc.												
Pentafluoroethane or Refrigerant gas R 125.	2.2	UN3220		2.2	150	306	304	314, 315.	75 kg	150 kg	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Pentamethylheptane	3	UN2286	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Pentane-2,4-dione	3	UN2310	III	3, 6.1	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	
	Pentanes	3	UN1265	I	3	T11, TP2	150	201	243	1 L	30 L	E	
	Pentantiroaniline (dry)	Forbidden		II	3	IB2, IP8, T4, TP1	150	202	242	5 L	60 L	E	
	Pentanol	3	UN1105	II	3	IB2, T4, TP1, TP29	150	202	242	5 L	60 L	B	
	1-Pentene (n-amy/ene)	3	UN1108	III	3	B1, IB3, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	1-Pentol	8	UN2705	II	3	T11, TP2	150	201	243	1 L	30 L	E	
	Pentolite, dry or wetted with less than 15 percent water, by mass. Pepper spray, see Aerosols, etc. or Self-defense spray, non-pressurized.	1.1D	UN0151	II	1.1D	B2, IB2, T7, TP2	154	202	242	1 L	30 L	B	26, 27
	Perchlorates, inorganic, aqueous solution, n.o.s.	5.1	UN3211	II	5.1	IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
	Perchlorates, inorganic, n.o.s.	5.1	UN1481	III	5.1	IB2, T4, TP1	152	202	241	2.5 L	30 L	B	56, 58, 69, 133
	Perchloric acid, with more than 72 percent acid by mass.	Forbidden		II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Perchloric acid with more than 50 percent but not more than 72 percent acid, by mass.	5.1	UN1873	I	5.1, 8	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Perchloric acid with not more than 50 percent acid by mass.	8	UN1802	II	8, 5.1	A2, A3, N41, T10, TP1	None	201	243	Forbidden	2.5 L	D	66
	Perchloroethylene, see Tetrachloroethylene.					IB2, N41, T7, TP2	None	202	243	Forbidden	30 L	C	66
	Perchloromethyl mercaptan	6.1	UN1670	I	6.1	2, B9, B14, B32, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Perchloryl fluoride	2.3	UN3083		2.3, 5.1	2, B9, B14	None	302	314, 315	Forbidden	Forbidden	D	40
	Percussion caps, see Primers, cap type.												
	Perfluoro-2-butene, see Octafluorobut-2-ene.												

UN number	Proper shipping name	Hazard class	Packaging group	Label code	Quantity	Special provisions	Quantity	Special provisions	Quantity	Special provisions	Quantity	Special provisions
2.1 UN3154	Perfluoro(ethyl vinyl ether)	2.1		2.1	306	302, 304, 305	314, 315	302, 304, 305	314, 315	306	302, 304, 305	314, 315
2.1 UN3153	Perfluoro(methyl vinyl ether)	2.1		2.1	306	302, 304, 305	314, 315	302, 304, 305	314, 315	306	302, 304, 305	314, 315
3 UN1266	Perfumery products with flammable solvents	3		II 3	150	202	242	202	242	150	202	242
5.1 UN3214	Permanganates, inorganic, aqueous solution, n.o.s.	5.1		II 5.1	152	202	242	202	242	152	202	242
5.1 UN1482	Permanganates, inorganic, n.o.s.	5.1		II 5.1	152	212	242	212	242	152	212	242
5.1 UN1483	Peroxides, inorganic, n.o.s.	5.1		III 5.1	None	213	240	213	240	None	213	240
Forbidden	Peroxyacetic acid, with more than 43 percent and with more than 6 percent hydrogen peroxide.	Forbidden										
5.1 UN3216	Persulfates, inorganic, aqueous solution, n.o.s.	5.1		III 5.1	152	203	241	203	241	152	203	241
5.1 UN3215	Persulfates, inorganic, n.o.s.	5.1		III 5.1	152	213	240	213	240	152	213	240
3 UN3021	Pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3		I 3, 6.1	None	201	243	201	243	None	201	243
6.1 UN2903	Pesticides, liquid, toxic, flammable, n.o.s. flash point not less than 23 degrees C.	6.1		II 6.1, 3	None	201	243	201	243	None	201	243
6.1 UN2902	Pesticides, liquid, toxic, n.o.s.	6.1		II 6.1, 3	153	202	243	202	243	153	202	243
6.1 UN2588	Pesticides, solid, toxic, n.o.s.	6.1		III 6.1	153	203	241	203	241	153	203	241
PETN, see Pentaerythrite tetranitrate												
PETN/TNT, see Pentolite, etc												
Petrol, see Gasoline												
Petroleum crude oil												
3 UN1267	Petroleum crude oil	3		I 3	150	201	243	201	243	150	201	243
				II 3	150	202	242	202	242	150	202	242
				III 3	150	203	242	203	242	150	203	242

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Petroleum distillates, n.o.s. or Petroleum products, n.o.s.	3	UN1268	I	3	144, T11, TP1, TP8	150	201	243	1 L	30 L	E	
				II	3	144, IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Petroleum gases, liquefied or Liquefied petroleum gas.	2.1	UN1075		2.1	T50	306	304	314, 315	Forbidden	150 kg	E	40
D	Petroleum oil	3	NA1270	I	3	144, T11, TP1	None	201	243	1 L	30 L	E	
				II	3	144, IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Phenacyl bromide	6.1	UN2645	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
+	Phenelidines	6.1	UN2311	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Phenol, molten	6.1	UN2312	II	6.1	B14, T7, TP3	None	202	243	Forbidden	Forbidden	B	40
+	Phenol, solid	6.1	UN1671	II	6.1	IB8, IP2, IP4, N78, T3, TP33	153	212	242	25 kg	100 kg	A	
	Phenol solutions	6.1	UN2821	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
				III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Phenolsulfonic acid, liquid	8	UN1803	II	8	B2, IB2, N41, T7, TP2	154	202	242	1 L	30 L	C	14
	Phenoxyacetic acid derivative pesticide, liquid, flammable, toxic flash point less than 23 degrees C.	3	UN3346	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Phenoxyacetic acid derivative pesticide, liquid, toxic.	6.1	UN3348	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN3347	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40

Chemical Name	UN Number	Class	Subclass	Label	Quantity	Special Provisions	Other	Quantity	Special Provisions	Other
Phenoxyacetic acid derivative pesticide, solid, toxic.	6.1 UN3345	I	6.1	IB7, IP1, T6, TP33	5 kg	242	40	A	40	
Phenyl chloroformate	6.1 UN2746	III	6.1	IB8, IP2, IP4, T3, TP33	25 kg	242	40	A	40	
Phenyl isocyanate	6.1 UN2487	II	6.1, 8	IB8, IP3, T1, TP33	100 kg	240	40	A	40	12, 13, 21, 25, 40, 100
Phenyl mercaptan	6.1 UN2337	I	6.1, 3	IB2, T7, TP2, TP13	1 L	243	40	A	40	
Phenyl phosphorus dichloride	8 UN2798	I	8	2, B9, B14, B32, B77, N33, N34, T20, TP2, TP13, TP38, TP45	Forbidden	244	40, 52	D	40, 52	
Phenyl phosphorus trichloride	8 UN2799	I	8	2, B9, B14, B32, B77, TP13, TP38, TP45	Forbidden	244	40, 52	B	40, 52	
Phenyl urea pesticides, liquid, toxic	6.1 UN3002	II	6.1	B2, B15, IB2, T7, TP2	Forbidden	242	40	B	40	
Phenylacetone, liquid	6.1 UN2470	I	6.1	B2, B15, IB2, T7, TP2	Forbidden	242	40	B	40	
Phenylacetyl chloride	8 UN2577	III	8	T14, TP2, TP27	1 L	243	40	B	40	
Phenylcarbamylamine chloride	6.1 UN1672	II	6.1	T7, TP2	5 L	243	40	B	40	
<i>m</i> -Phenylene diaminedipchlorate (dry)	Forbidden	III	6.1	T4, TP1	60 L	241	40	A	40	
Phenylenediamines (o-, m-, p-)	6.1 UN1673	III	6.1	IB3, T4, TP1	60 L	241	40	A	40	
Phenyldiazine	6.1 UN2572	II	6.1	B2, IB2, T7, TP2	1 L	242	40	C	40	
Phenylmercuric acetate	6.1 UN1674	I	6.1	2, B9, B14, B32, T20, TP2, TP13, TP38, TP45	Forbidden	242	40	C	40	
Phenylmercuric compounds, n.o.s.	6.1 UN2026	I	6.1	IB8, IP3, T1, TP33	100 kg	240	40	A	40	
Phenylmercuric hydroxide	6.1 UN1894	III	6.1	IB8, IP2, IP4, T3, TP33	25 kg	242	40	A	40	
Phenylmercuric nitrate	6.1 UN1895	II	6.1	IB8, IP2, IP4, T3, TP33	25 kg	242	40	A	40	
Phenyltrichlorosilane	8 UN1804	II	8	A7, B6, N34, T10, TP2, TP7, TP13	Forbidden	242	40	C	40	
Phosgene	2.3 UN1076	.....	2.3, 8	A19, IB6, IP2, T3, TP33	Forbidden	314	40	D	40	
9-Phosphabicyclononanes or Cyclooctadiene phosphines	4.2 UN2940	II	4.2	1, B7, B46	15 kg	241	40	A	40	
Phosphine	2.3 UN2199	.....	2.3, 2.1	1	Forbidden	245	40	D	40	
Phosphoric acid solution	8 UN1805	III	8	A7, IB3, N34, T4, TP1	5 L	241	40	A	40	
Phosphoric acid, solid	8 UN3453	III	8	IB8, IP3, T1, TP33	25 kg	240	40	A	40	
Phosphoric acid triethylamine, see Phosphoric acid triethylamine solution.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phosphoric aziridine, see Phosphorus pentoxide.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phosphorus acid	8 UN2834	III	8	IB8, IP3, T1, TP33	25 kg	240	48	A	48	
Phosphorus, amorphous	4.1 UN1338	III	4.1	A1, A19, B1, B9, B26, IB8, IP3, T1, TP33	25 kg	243	74	A	74	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi- cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	Phosphorus bromide, see Phosphorus tribromide.												
	Phosphorus chloride, see Phosphorus trichloride.												
	Phosphorus heptasulfide, free from yellow or white phosphorus.	4.1	UN1339	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
	Phosphorus oxybromide	8	UN1939	II	8	B8, IB8, IP2, IP4, N41, N43, T3, TP33	None	212	240	Forbidden	50 kg	C	12, 40
	Phosphorus oxybromide, molten	8	UN2576	II	8	B2, B8, IB1, N41, N43, T7, TP3, TP13	None	202	242	Forbidden	Forbidden	C	40
	Phosphorus oxychloride	8	UN1810	II	8, 6.1	2, B9, B14, B32, B77, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
	Phosphorus pentabromide	8	UN2691	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	Forbidden	50 kg	B	12, 40, 53, 55
	Phosphorus pentachloride	8	UN1806	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	None	212	240	Forbidden	50 kg	C	40, 44, 89, 100, 141
	Phosphorus Pentafluoride	2.3	UN2198		2.3, 8	2, B9, B14	None	302	314, 315	Forbidden	Forbidden	D	40
	Phosphorus pentasulfide, free from yellow or white phosphorus.	4.3	UN1340	II	4.3, 4.1	A20, B59, IB4, T3, TP33	151	212	242	15 kg	50 kg	B	74
	Phosphorus pentoxide	8	UN1807	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	
	Phosphorus sesquisulfide, free from yellow or white phosphorus.	4.1	UN1341	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
	Phosphorus tribromide	8	UN1808	II	8	A3, A6, A7, B2, B25, IB2, N34, N43, T7, TP2, TP13, TP38, TP45	None	202	242	Forbidden	30 L	C	40
	Phosphorus trichloride	6.1	UN1809	I	6.1, 8	2, B9, B14, B15, B32, B77, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
	Phosphorus trioxide	8	UN2578	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12
	Phosphorus trisulfide, free from yellow or white phosphorus.	4.1	UN1343	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74

Description	UN Number	Hazard Class	Label Code	Special Provisions	Quantity	Forbidden	Forbidden	Forbidden	Quantity	Label Code	Special Provisions	Quantity	Hazard Class	Forbidden	Quantity
Phosphorus, white dry or Phosphorus, white, under water or Phosphorus white, in solution or Phosphorus, yellow dry or Phosphorus, yellow, under water or Phosphorus, yellow, in solution. Phosphorus white, molten	4.2 UN1381	I	4.2, 6.1	B9, B26, N34, T9, TP3, TP31	None	188	243	Forbidden		243					
Phosphorus (white or red) and a chloride, mixtures of. Phosphoryl chloride, see Phosphorus oxychloride.	4.2 UN2447	I	4.2, 6.1	B9, B26, N34, T21, TP3, TP7, TP26	None	188	243	Forbidden		243			D		
Phthalic anhydride with more than .05 percent maleic anhydride.	8 UN2214	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg		240			A	100 kg	
Picolines	3 UN2313	III	3	B1, IB3, T4, TP1	150	203	242	60 L		242			A	220 L	40
Picric acid, see Trinitrophenol, etc															
Picric acid, see Nitroguanidine, etc															
Picryl chloride, see Trinitrochlorobenzene.															
Pine oil	3 UN1272	III	3	B1, IB3, T2, TP1	150	203	242	60 L		242			A	220 L	
alpha-Pinene	3 UN2368	III	3	B1, IB3, T2, TP1	150	203	242	60 L		242			A	220 L	
Piperazine	8 UN2579	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg		240			A	100 kg	12, 52
Piperidine	8 UN2401	I	8, 3	A10, T10, TP2	None	201	243	0.5 L		243			B	2.5 L	52
Pivaloyl chloride, see Trimethylacetyl chloride.															
Plastic molding compound in dough, sheet or extruded rope form evolving flammable vapor.	9 UN3314	III	9	32, IB8, IP3, IP7	155	221	221	100 kg		221			E	200 kg	19, 21, 25, 87, 144
Plastic solvent, n.o.s., see Flammable liquids, n.o.s.															
Plastics, nitrocellulose-based, self-heating, n.o.s.	4.2 UN2006	III	4.2		None	213	None	Forbidden		None			C	Forbidden	
Poisonous gases, n.o.s., see Compressed or liquefied gases, flammable or toxic, n.o.s.															
Polyalkylamines, n.o.s., see Amines, etc.															
Polyamines, flammable, corrosive, n.o.s. see Amines, flammable, corrosive, n.o.s.															
Polyamines, liquid, corrosive, n.o.s. see Amines, liquid, corrosive, n.o.s.															
Polyamines, liquid, corrosive, flammable, n.o.s. see Amines, liquid, corrosive, flammable, n.o.s.															
Polychlorinated biphenyls, liquid	9 UN2315	II	9	9, 81, 140, IB3, T4, TP1	155	202	241	100 L		241			A	220 L	95
Polychlorinated biphenyls, solid	9 UN3432	II	9	9, 81, 140, IB8, IP2, IP4, T3, TP33	155	212	240	100 kg		240			A	200 kg	95
Polyester resin kit	3 UN3269	III	3	40, 149	152	225	None	5 kg		None			B	5 kg	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Polyhalogenated biphenyls, liquid or Polyhalogenated terphenyls liquid.	9	UN3151	II	9	IB2	155	204	241	100 L	220 L	A	95
	Polyhalogenated biphenyls, solid or Polyhalogenated terphenyls, solid.	9	UN3152	II	9	IB8, IP2, IP4, T3, TP33	155	204	241	100 kg	200 kg	A	95
	Polymeric beads expandable, evolving flammable vapor.	9	UN2211	III	9	32, IB8, IP3, IP7, T1, TP33	155	221	221	100 kg	200 kg	E	19, 21, 25, 87, 144, 52
	Potassium	4.3	UN2257	I	4.3	A7, A19, A20, B27, IB4, IP1, N6, N34, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	
	Potassium arsenate	6.1	UN1877	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Potassium arsenite	6.1	UN1678	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Potassium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.												
	Potassium borohydride	4.3	UN1870	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
	Potassium bromate	5.1	UN1484	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Potassium carbonyl	Forbidden											
	Potassium chlorate	5.1	UN1485	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Potassium chlorate, aqueous solution	5.1	UN2427	II	5.1	A2, IB2, T4, TP1	152	202	241	1 L	5 L	B	56, 58, 133
	Potassium chlorate mixed with mineral oil, see Explosive, blasting, type C.			III	5.1	A2, IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 69, 133
	Potassium cuprocyanide	6.1	UN1679	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Potassium cyanide, solid	6.1	UN1680	I	6.1	B69, B77, IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	B	52
	Potassium cyanide solution	6.1	UN3413	I	6.1	B69, B77, N74, N75, T14, TP2, TP13	None	201	243	1 L	30 L	B	52
				II	6.1	B69, B77, IB2, N74, N75, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	52
				III	6.1	B69, B77, IB3, N74, N75, T7, TP2, TP13, TP28	153	203	241	60 L	220 L	A	52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi- cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$ 172.102)	(8) Packaging (\$ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	Potassium phosphide	4.3	UN2012	I	4.3, 6.1.	A19, N40	None ...	211 ...	None	Forbidden	15 kg	E	40, 52, 85
	Potassium selenate, see Selenates or Selenites. Potassium selenite, see Selenates or Selenites.												
	Potassium sodium alloys, liquid	4.3	UN1422	I	4.3	A7, A19, B27, N34, N40, T9, TP3, TP7, TP31	None ...	201 ...	244 ...	Forbidden	1 L	E	40, 52
	Potassium sodium alloys, solid	4.3	UN3404	I	4.3	A19, B27, N34, N40, T9, TP7, TP33	None ...	211 ...	244 ...	Forbidden	15 kg	D	52
	Potassium sulfide, anhydrous or Po- tassium sulfide with less than 30 percent water of crystallization, Potassium sulfide, hydrated with not less than 30 percent water of crys- tallization.	4.2	UN1382	II	4.2	A19, A20, B16, IB6, IP2, N34, T3, TP33	None ...	212 ...	241 ...	15 kg	50 kg	A	52
	Potassium superoxide	8	UN1847	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
	Powder cake, wetted or Powder paste, wetted with not less than 17 percent alcohol by mass.	5.1	UN2466	I	5.1	A20, IB6, IP1	None ...	211 ...	None	Forbidden	15 kg	B	13, 52, 66, 75
	Powder cake, wetted or Powder paste, wetted with not less than 25 percent water, by mass.	1.1C	UN0433	II	1.1C		None ...	62	None	Forbidden	Forbidden	10	
	Powder paste, see Powder cake, etc	1.3C	UN0159	II	1.3C		None ...	62	None	Forbidden	Forbidden	10	
	Powder, smokeless	1.1C	UN0160	II	1.1C		None ...	62	None	Forbidden	Forbidden		20E
	Powder, smokeless	1.3C	UN0161	II	1.3C		None ...	62	None	Forbidden	Forbidden		20E
	Powder, smokeless	1.4C	UN0509		1.4C		None ...	62	None	Forbidden	Forbidden		
	Power device, explosive, see Car- tridges, power device.												
	Primers, cap type	1.4S	UN0044	II	None		None ...	62	None	25 kg	100 kg	05	
	Primers, cap type	1.1B	UN0377	II	1.1B		None ...	62	None	Forbidden	Forbidden	11	
	Primers, cap type	1.4B	UN0378	II	1.4B		None ...	62	None	Forbidden	75 kg	06	
	Primers, small arms, see Primers, cap type.												
	Primers, tubular	1.3G	UN0319	II	1.3G		None ...	62	None	Forbidden	Forbidden	07	
	Primers, tubular	1.4G	UN0320	II	1.4G		None ...	62	None	Forbidden	75 kg	06	
	Primers, tubular	1.4S	UN0376	II	None		None ...	62	None	25 kg	100 kg	05	

D

UN number	Class	Division	Subdivision	Proper shipping name	Quantity	Special provisions	Quantity	Special provisions	Quantity	Special provisions
3 UN1210	I	3	.....	Printing ink, flammable or Printing ink related material (including printing ink thinning or reducing compound), flammable.	150	.....	173	.....	243	.....
.....	II	3	.....	.....	150	.....	173	.....	242	.....
.....	III	3	.....	.....	150	.....	173	.....	242	.....
1.4S UN0345	II	1.4S	.....	Projectiles, illuminating, see Ammunition, illuminating, etc.	.....	.....	62	.....	62	.....
1.3G UN0424	II	1.3G	.....	Projectiles, inert with tracer	.....	.....	62	.....	62	.....
1.4G UN0425	II	1.4G	.....	Projectiles, inert, with tracer	.....	.....	62	.....	62	.....
1.2D UN0346	II	1.2D	.....	Projectiles, with burster or expelling charge.	.....	.....	62	.....	62	.....
1.4D UN0347	II	1.4D	.....	Projectiles, with burster or expelling charge.	.....	.....	62	.....	62	.....
1.2F UN0426	II	1.2F	.....	Projectiles, with burster or expelling charge.	.....	.....	62	.....	None	.....
1.4F UN0427	II	1.4F	.....	Projectiles, with burster or expelling charge.	.....	.....	62	.....	None	.....
1.2G UN0434	II	1.2G	.....	Projectiles, with burster or expelling charge.	.....	.....	62	.....	62	.....
1.4G UN0435	II	1.4G	.....	Projectiles, with burster or expelling charge.	.....	.....	62	.....	62	.....
1.1F UN0167	II	1.1F	.....	Projectiles, with bursting charge	.....	.....	62	.....	None	.....
1.1D UN0168	II	1.1D	.....	Projectiles, with bursting charge	.....	.....	62	.....	62	.....
1.2D UN0169	II	1.2D	.....	Projectiles, with bursting charge	.....	.....	62	.....	62	.....
1.2F UN0324	II	1.2F	.....	Projectiles, with bursting charge	.....	.....	62	.....	None	.....
1.4D UN0344	II	1.4D	.....	Projectiles, with bursting charge	.....	.....	62	.....	62	.....
2.1 UN2200	.....	2.1	.....	Propadiene, stabilized	None	.....	304	.....	314, 315	.....
.....	.....	.....	.....	Propadiene mixed with methyl acetylene, see Methyl acetylene and propadiene mixtures, stabilized.	.....	.....	.....	.....	.....	.....
2.1 UN1978	.....	2.1	.....	Propane see also Petroleum gases, liquefied.	306	.....	304	.....	314, 315	.....
3 UN2402	II	3	.....	Propanethiols	150	.....	202	.....	242	.....
3 UN1274	III	3	.....	n-Propanol or Propyl alcohol, normal	150	.....	202	.....	242	.....
1.3C UN0495	III	1.3C	.....	Propellant, liquid	None	.....	62	.....	None	.....
1.1C UN0497	II	1.1C	.....	Propellant, liquid	None	.....	62	.....	None	.....
1.1C UN0498	II	1.1C	.....	Propellant, solid	None	.....	62	.....	None	.....
1.3C UN0499	II	1.3C	.....	Propellant, solid	None	.....	62	.....	None	.....
1.4C UN0501	.....	1.4C	.....	Propellant, solid	None	.....	62	.....	None	.....
3 UN1275	II	3	.....	Propionaldehyde	150	.....	202	.....	242	.....
8 UN3463	II	8, 3	.....	Propionic acid with not less than 90% acid by mass.	154	.....	202	.....	243	.....
8 UN1848	III	8	.....	Propionic acid with not less than 10% and less than 90% acid by mass.	154	.....	203	.....	241	.....
8 UN2496	III	8	.....	Propionic anhydride	154	.....	203	.....	241	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	Propionitrile	3	UN2404	II	3, 6.1	IB2, T7, TP1, TP13	None	202	243	Forbiden	60 L	E	40
	Propionyl chloride	3	UN1815	II	3, 8	IB1, T7, TP1	150	202	243	1 L	5 L	B	40
	n-Propyl acetate	3	UN1276	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Propyl alcohol, see Propanol												
	n-Propyl benzene	3	UN2364	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	n-Propyl chloroformate	6.1	UN2740	I	6.1, 3, 8	2, B9, B14, B32, B77, N34, T20, TP2, TP13, TP38, TP44	None	227	244	Forbiden	Forbiden	B	21, 40, 100
	Propyl chloride see 1-Chloropropane												
	Propyl formates	3	UN1281	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	n-Propyl isocyanate	6.1	UN2482	I	6.1, 3	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44	None	226	244	Forbiden	Forbiden	D	40
	Propyl mercaptan, see Propanethiols												
	n-Propyl nitrate	3	UN1865	II	3	IB9	150	202	None	5 L	60 L	D	44, 89, 90, 100
	Propylamine	3	UN1277	II	3, 8	A7, IB2, N34, T7, TP1	150	202	243	1 L	5 L	E	40
	Propylene see also Petroleum gases, liquefied.	2.1	UN1077		2.1	19, T50	306	304	314, 315	Forbiden	150 kg	E	40
	Propylene chlorohydrin	6.1	UN2611	II	6.1, 3	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	A	12, 40, 48
	Propylene oxide	3	UN1280	I	3	A3, N34, T11, TP2, TP7	None	201	243	1 L	30 L	E	40
	Propylene tetramer	3	UN2850	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	1,2-Propylenediamine	8	UN2258	II	8, 3	A3, A6, IB2, N34, T7, TP2	None	202	243	1 L	30 L	A	40
	Propyleneimine, stabilized	3	UN1921	I	3, 6.1	A3, N34, T14, TP2, TP13	None	201	243	1 L	30 L	B	40
	Propyltrichlorosilane	8	UN1816	II	8, 3	A7, B2, B6, N34, T10, TP2, TP7, TP13	None	206	243	Forbiden	30 L	C	40
	Prussic acid, see Hydrogen cyanide												
	Pyrethroid pesticide, liquid, flam- mable, toxic, flash point less than 23 degrees C.	3	UN3350	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbiden	30 L	B	40
	Pyrethroid pesticide, liquid toxic	6.1	UN3352	I	6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
				II	6.1	T14, TP2, TP13, TP27	None	211	242	1 L	30 L	A	40
				III	6.1	IB2, T11, TP2, TP27	153	212	242	5 L	60 L	A	40
					6.1	IB3, T7, TP2, TP28	153	213	240	60 L	220 L	A	40

	6.1	UN3351	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
Pyrethroid pesticide, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN3351	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
Pyrethroid pesticide, solid, toxic	6.1	UN3349	III	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
Pyridine	3	UN1282	III	3	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	B	40
Pyridine perchlorate	Forbidden		I	4.2	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
Pyrophoric liquid, inorganic, n.o.s.	4.2	UN3194	I	4.2	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
Pyrophoric liquids, organic, n.o.s.	4.2	UN2845	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Pyrophoric metals, n.o.s., or Pyrophoric alloys, n.o.s.	4.2	UN1383	II	3	IB2, T4, TP2	None	202	242	5 L	60 L	B	21, 100
Pyrophoric solid, inorganic, n.o.s.	4.2	UN3200	I	4.2	B11, T22, TP2, TP7	None	181	244	Forbidden	Forbidden	D	18
Pyrophoric solids, organic, n.o.s.	4.2	UN2846	I	4.2	B11, T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	18
Pyrosulfonyl chloride	8	UN1817	II	8	T21, TP7, TP33	None	187	242	Forbidden	Forbidden	D	
Pyroxilin solution or solvent, see Nitrocellulose.			II	8	B2, IB2, T8, TP2	154	202	242	1 L	30 L	C	40
Pyrrrolidine	3	UN1922	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40, 52
Quebrachitol pentanitrate	Forbidden											
Quicklime, see Calcium oxide												
Quinoline	6.1	UN2656	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12
R 12, see Dichlorodifluoromethane												
R 12B1, see Chlorodifluorobromomethane.												
R 13, see Chlorotrifluoromethane												
R 13B1, see Bromotrifluoromethane												
R 14, see Tetrafluoromethane												
R 21, see Dichlorodifluoromethane												
R 22, see Chlorodifluoromethane												
R 114, see Dichlorotetrafluoroethane												
R 115, see Chloropentafluoroethane												
R 116, see Hexafluoroethane												
R 124, see Chlorotetrafluoroethane												
R 133a, see Chlorotrifluoroethane												
R 152a, see Difluoroethane												
R 500, see Dichlorodifluoromethane and difluoroethane, etc.												
R 502, see Chlorodifluoromethane and chloropentafluoroethane mixture, etc.												
R 503, see Chlorotrifluoromethane and trifluoroethane, etc.												
Radioactive material, excepted package-articles manufactured from natural uranium or depleted uranium or natural thorium.	7	UN2909		None		422, 426	422, 426	422, 426			A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard Class or Division	(4) Identifi- cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$ 172.102)	(8) Packaging (\$ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Radioactive material, excepted pack- age-empty packaging.	7	UN2908		Empty		422, 428.	422, 428.	422, 428.			A	
	Radioactive material, excepted pack- age-instruments or articles.	7	UN2911		None		422, 424.	422, 424.				A	
	Radioactive material, excepted pack- age-limited quantity of material.	7	UN2910		None		421, 422.	421, 422.	421, 422.			A	
	Radioactive material, low specific ac- tivity (LSA-I) non fissile or fissile- excepted.	7	UN2912		7	A56, T5, TP4, W7	421, 422.	421, 422.	427			A	95, 129
	Radioactive material, low specific ac- tivity (LSA-II) non fissile or fissile- excepted.	7	UN3321		7	A56, T5, TP4, W7	421, 428.	421, 428.	427			A	95, 129
	Radioactive material, low specific ac- tivity (LSA-III) non fissile or fissile excepted.	7	UN3322		7	A56, T5, TP4, W7	421, 422.	421, 422.	427			A	95, 129
	Radioactive material, surface con- taminated objects (SCO-I or SCO- II) non fissile or fissile-excepted.	7	UN2913		7	A56	421, 422.	421, 422.	427			A	95
	Radioactive material, transported under special arrangement, non fissile or fissile excepted.	7	UN2919		7	A56, 139						A	95, 105
	Radioactive material, transported under special arrangement, fissile.	7	UN3331		7	A56, 139						A	95, 105
	Radioactive material, Type A pack- age, fissile non-special form.	7	UN3327		7	A56, W7, W8	453	417	417			A	95, 105, 131
	Radioactive material, Type A pack- age non-special form, non fissile or fissile-excepted.	7	UN2915		7	A56, W7, W8	None	415, 418, 419.	415, 418, 419.			A	95, 130
	Radioactive material, Type A pack- age, special form non fissile or fissile-excepted.	7	UN3332		7	A56, W7, W8		415, 476.	415, 476.			A	95
	Radioactive material, Type A pack- age, special form, fissile.	7	UN3333		7	A56, W7, W8	453	417, 476.	417, 476.			A	95, 105
	Radioactive material, Type B(M) package, fissile.	7	UN3329		7	A56	453	417	417			A	95, 105

Radioactive material, Type B(M) package non fissile or fissile-excepted.	7	UN2917	7	.....	A56	.....	416	.....	416	.....	A	95, 105
Radioactive material, Type B(U) package, fissile.	7	UN3328	7	.....	A56	453	417	.....	417	.....	A	95, 105
Radioactive material, Type B(U) package non fissile or fissile-excepted.	7	UN2916	7	.....	A56	.....	416	.....	416	.....	A	95, 105
Radioactive material, uranium hexafluoride non fissile or fissile-excepted.	7	UN2978	7, 8	.....	.....	423	420, 427.	.....	420, 427.	.....	A	95, 132
Radioactive material, uranium hexafluoride, fissile.	7	UN2977	7, 8	.....	.....	453	417, 420, 427.	.....	417, 420, 427.	.....	A	95, 132
Regs. only	4.2	UN1856	III	4.2	.....	151	213	.....	240	.....	Forbidden	.....
Railway torpedo, see Signals, railway track, explosive.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Forbidden	.....
RC 318, see Octafluorocyclobutane	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
RDX, cyclotetramethylenetetramine, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
RDX and HMX mixtures, wetted with not less than 15 percent water by mass or RDX and HMX mixtures, desensitized with not less than 10 percent phlegmatizer by mass.	1.1D	UN0391	II	1.1D	.....	None	62	.....	None	.....	Forbidden	10
RDX and Octogen mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
RDX, see Cyclotrimethylene trinitramine, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Receptacles, small, containing gas or gas cartridges (flammable) without release device, not refillable and not exceeding 1 L capacity.	2.1	UN2037	2.1	306	304	None	1 kg	15 kg	40
Receptacles, small, containing gas or gas cartridges (non-flammable) without release device, not refillable and not exceeding 1 L capacity.	2.2	UN2037	2.2	306	304	None	1 kg	15 kg	40
Receptacles, small, containing gas or gas cartridges (oxidizing) without release device, not refillable and not exceeding 1 L capacity.	2.2	UN2037	2.2, 5.1.	A14	306	304	None	1 kg	15 kg	40
Red phosphorus, see Phosphorus, amorphous.
Refrigerant gas R 404A	2.2	UN3337	2.2	T50	306	304	314, 315.	75 kg	150 kg

A W

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Refrigerant gas R 407A	2.2	UN3338		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Refrigerant gas R 407B	2.2	UN3339		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Refrigerant gas R 407C	2.2	UN3340		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
G	Refrigerant gases, n.o.s.	2.2	UN1078		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
D	Refrigerant gases, n.o.s. or Dispersant gases, n.o.s.	2.1	NA1954		2.1	T50	306	304	314, 315	Forbidden	150 kg	D	40
	Refrigerating machines, containing flammable, non-toxic, liquefied gas.	2.1	UN3358		2.1		306, 307	306	306	Forbidden	Forbidden	D	40
	Refrigerating machines, containing non-flammable, non-toxic gases, or ammonia solutions (UN2672).	2.2	UN2857		2.2	A53	306, 307	306	306, 307	450 kg	450 kg	A	
	Regulated medical waste, n.o.s. or Clinical waste, unspecified, n.o.s. or (BIO) Medical waste, n.o.s., or Biomedical waste, n.o.s. or Medical waste, n.o.s.	6.2	UN3291	II	6.2	41, A13	134	197	197	No limit	No limit	B	40
	Release devices, explosive	1.4S	UN0173	II	1.4S		None	62	62	25 kg	100 kg	05	
	Resin solution, flammable	3	UN1866	I	3	B52, T11, TP1, TP8, TP28	150	201	243	1 L	30 L	E	
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	
	Resorcinol	6.1	UN2876	III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A	
	Rifle grenade, see Grenades, hand or rifle, etc.			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Rifle powder, see Powder, smokeless (UN 0160).												
	Rivets, explosive	1.4S	UN0174	II	1.4S		None	62	62	25 kg	100 kg	05	
	Road asphalt or tar liquid, see Tars, liquid, etc.												
	Rocket motors	1.3C	UN0186	II	1.3C	109	None	62	62	Forbidden	220 kg	03	
	Rocket motors	1.1C	UN0280	II	1.1C	109	None	62	62	Forbidden	Forbidden	03	
	Rocket motors	1.2C	UN0281	II	1.2C	109	None	62	62	Forbidden	Forbidden	03	
	Rocket motors, liquid fueled	1.2J	UN0395	II	1.2J	109	None	62	None	Forbidden	Forbidden	04	23E

UN number	Description	Class	Subclass	Label	Quantity	Special provisions	Prohibitions	Other
UN0396	Rocket motors, liquid fueled	II	1.3J	None	62	None	Forbidden	04
UN0250	Rocket motors with hypergolic liquids with or without an expelling charge.	II	1.3L	None	62	None	Forbidden	08
UN0322	Rocket motors with hypergolic liquids with or without an expelling charge.	II	1.2L	None	62	None	Forbidden	08
UN0238	Rockets, line-throwing	II	1.2G	None	62	None	Forbidden	07
UN0240	Rockets, line-throwing	II	1.3G	None	62	None	Forbidden	07
UN0453	Rockets, line-throwing	II	1.4G	None	62	None	Forbidden	06
UN0397	Rockets, liquid fueled with bursting charge.	II	1.1J	None	62	None	Forbidden	04
UN0398	Rockets, liquid fueled with bursting charge.	II	1.2J	None	62	None	Forbidden	04
UN0180	Rockets, with bursting charge	II	1.1F	None	62	None	Forbidden	08
UN0181	Rockets, with bursting charge	II	1.1E	None	62	None	Forbidden	03
UN0182	Rockets, with bursting charge	II	1.2E	None	62	None	Forbidden	03
UN0295	Rockets, with bursting charge	II	1.2F	None	62	None	Forbidden	08
UN0436	Rockets, with expelling charge	II	1.2C	None	62	None	Forbidden	03
UN0437	Rockets, with expelling charge	II	1.3C	None	62	None	Forbidden	03
UN0438	Rockets, with expelling charge	II	1.4C	None	62	None	Forbidden	03
UN0183	Rockets, with inert head	II	1.3C	None	62	None	Forbidden	03
UN0502	Rockets, with inert head	II	1.2C	None	62	None	Forbidden	03
UN1286	Rosin oil	III	3	150	202	242	Forbidden	B
UN1287	Rubber solution	III	3	150	203	242	Forbidden	A
UN1345	Rubber scrap or shoddy, powdered or granulated, not exceeding 840 microns and rubber content exceeding 45%.	III	3	150	202	242	Forbidden	B
UN1423	Rubidium	I	4.3	None	211	242	Forbidden	D
UN2678	Rubidium hydroxide	II	8	154	212	240	Forbidden	A
UN2677	Rubidium hydroxide solution	III	8	154	202	242	Forbidden	A
UN0190	Safety fuse, see Fuse, safety	II		None	62	None	Forbidden	14
UN1386	Samples, explosive, other than initiating explosives.	III	4.2	None	213	241	Forbidden	A
UN1386	Seed cake, containing vegetable oil solvent extractors and expelled seeds, with not more than 10 percent of oil and when the amount of moisture is higher than 11 percent, with not more than 20 percent of oil and moisture combined.	III	4.2	None	213	241	Forbidden	E

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
I	Seed cake with not more than 1.5 percent oil and not more than 11 percent moisture.	4.2	UN2217	III	None	IB8, IP3, IP7, N7	None ...	213 ...	241 ...	Forbidden	Forbidden	A	13
	Selenates or Selenites	6.1	UN2630	I	6.1	IB7, IP1, T6, TP33	None ...	211 ...	242 ...	5 kg	50 kg	E	
	Selenic acid	8	UN1905	I	8	T14, TP2, TP27	None ...	211 ...	242 ...	25 kg	25 kg	A	
	Selenium compound, liquid, n.o.s.	6.1	UN3440	II	6.1	IB2, T11, TP2, TP27	None ...	201 ...	243 ...	1L	30L	B	
				III	6.1	IB3, T7, TP1, TP28	153 ...	202 ...	243 ...	5 L	60 L	B	
	Selenium compound, solid, n.o.s.	6.1	UN3283	I	6.1	IB7, IP1, T6, TP33	None ...	203 ...	241 ...	60 L	220 L	A	
	Selenium disulfide	6.1	UN2657	II	6.1	IB8, IP2, IP4, T3, TP33	None ...	211 ...	242 ...	5 kg	50 kg	B	
	Selenium hexafluoride	2.3	UN2194	III	6.1	IB8, IP3, T1, TP33	153 ...	212 ...	242 ...	25 kg	100 kg	B	
	Selenium nitride	Forbidden		II	6.1	IB8, IP2, IP4, T3, TP33	153 ...	212 ...	242 ...	100 kg	200 kg	A	
	Selenium oxychloride	8	UN2879	I	8, 6.1	A3, A6, A7, N34, T10, TP2, TP13	None ...	302 ...	None	Forbidden	Forbidden	D	40
	Self-defense spray, aerosol, see Aerosols, etc.						None ...	201 ...	243 ...	0.5 L	2.5 L	E	40
+A	Self-defense spray, non-pressurized	9	NA3334	III	9	A37	155 ...	203 ...	None	No limit	No limit	A	
D	Self-heating liquid, corrosive, inorganic, n.o.s.	4.2	UN3188	II	4.2, 8	IB2	None ...	202 ...	243 ...	1 L	5 L	C	
G	Self-heating liquid, corrosive, organic, n.o.s.	4.2	UN3185	III	4.2, 8	IB2	None ...	203 ...	241 ...	5 L	60 L	C	
				II	4.2, 8	IB2	None ...	202 ...	243 ...	1 L	5 L	C	
G	Self-heating liquid, inorganic, n.o.s.	4.2	UN3186	III	4.2, 8	IB2	None ...	203 ...	241 ...	5 L	60 L	C	
				II	4.2	IB2	None ...	202 ...	241 ...	1 L	5 L	C	
G	Self-heating liquid, organic, n.o.s.	4.2	UN3183	III	4.2	IB2	None ...	202 ...	242 ...	1 L	5 L	C	
				II	4.2	IB2	None ...	203 ...	241 ...	5 L	60 L	C	
G	Self-heating liquid, toxic, inorganic, n.o.s.	4.2	UN3187	III	4.2, 6.1	IB2	None ...	202 ...	243 ...	1 L	5 L	C	
				II	4.2, 6.1	IB2	None ...	203 ...	241 ...	5 L	60 L	C	
G	Self-heating liquid, toxic, organic, n.o.s.	4.2	UN3184	III	4.2, 6.1	IB2	None ...	202 ...	243 ...	1 L	5 L	C	
				II	4.2, 6.1	IB2	None ...	203 ...	241 ...	5 L	60 L	C	

G	Self-heating solid, corrosive, inorganic, n.o.s.	4.2	UN3192	II	4.2, 8	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	.....
G	Self-heating solid, corrosive, organic, n.o.s.	4.2	UN3126	III	4.2, 8	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	.....
G	Self-heating solid, inorganic, n.o.s.	4.2	UN3190	III	4.2, 8	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	.....
G	Self-heating solid, organic, n.o.s.	4.2	UN3088	III	4.2	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	.....
G	Self-heating solid, oxidizing, n.o.s.	4.2	UN3127	III	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	C	.....
G	Self-heating solid, toxic, inorganic, n.o.s.	4.2	UN3191	II	4.2, 5.1, 6.1	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	.....
G	Self-heating solid, toxic, organic, n.o.s.	4.2	UN3128	III	4.2, 6.1	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	.....
G	Self-propelled vehicle, see Engines or Batteries etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
G	Self-reactive liquid type B	4.1	UN3221	II	4.1	53	None	224	None	Forbidden	Forbidden	D	52, 53
G	Self-reactive liquid type B, temperature controlled.	4.1	UN3231	II	4.1	53	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive liquid type C	4.1	UN3223	II	4.1	.....	None	224	None	5 L	10 L	D	52, 53
G	Self-reactive liquid type C, temperature controlled.	4.1	UN3233	II	4.1	.....	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive liquid type D	4.1	UN3225	II	4.1	.....	None	224	None	5 L	10 L	D	52, 53
G	Self-reactive liquid type D, temperature controlled.	4.1	UN3235	II	4.1	.....	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive liquid type E	4.1	UN3227	II	4.1	.....	None	224	None	10 L	25 L	D	52, 53
G	Self-reactive liquid type E, temperature controlled.	4.1	UN3237	II	4.1	.....	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive liquid type F	4.1	UN3229	II	4.1	.....	None	224	None	10 L	25 L	D	52, 53
G	Self-reactive liquid type F, temperature controlled.	4.1	UN3239	II	4.1	.....	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type B	4.1	UN3222	II	4.1	53	None	224	None	Forbidden	Forbidden	D	52, 53
G	Self-reactive solid type B, temperature controlled.	4.1	UN3232	II	4.1	53	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type C	4.1	UN3224	II	4.1	.....	None	224	None	5 kg	10 kg	D	52, 53
G	Self-reactive solid type C, temperature controlled.	4.1	UN3234	II	4.1	.....	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type D	4.1	UN3226	II	4.1	.....	None	224	None	5 kg	10 kg	D	52, 53
G	Self-reactive solid type D, temperature controlled.	4.1	UN3236	II	4.1	.....	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type E	4.1	UN3228	II	4.1	.....	None	224	None	10 kg	25 kg	D	52, 53
G	Self-reactive solid type E, temperature controlled.	4.1	UN3238	II	4.1	.....	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type F	4.1	UN3230	II	4.1	.....	None	224	None	10 kg	25 kg	D	52, 53

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage		
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)	
G	Self-reactive solid type F, temperature controlled.	4.1	UN3240	II	4.1			None	224	None	Forbidden	Forbidden	D	2, 52, 53
	Shale oil	3	UN1288	I 3 II 3 III 3	3	T11, TP1, TP8, TP27 IB2, T4, TP1, TP8 B1, IB3, T2, TP1	None	201 202 203	243 242 242	1 L 5 L 60 L	30 L 60 L 220 L	B B A		
	Shaped charges, see Charges, shaped, etc.													
	Signal devices, hand	1.4G	UN0191	II	1.4G		None	62	None	None	Forbidden	75 kg	06	
	Signal devices, hand	1.4S	UN0373	II	1.4S		None	62	None	None	Forbidden	100 kg	05	
	Signals, distress, ship	1.1G	UN0194	II	1.1G		None	62	None	None	Forbidden	Forbidden	07	
	Signals, distress, ship	1.3G	UN0195	II	1.3G		None	62	None	None	Forbidden	75 kg	07	
	Signals, distress, ship	1.4G	UN0505		1.4G		None	62	None	None	Forbidden	75 kg	06	
	Signals, distress, ship	1.4S	UN0506		1.4S		None	62	None	None	Forbidden	100 kg	05	
	Signals, highway, see Signal devices, hand													
	Signals, railway track, explosive	1.1G	UN0192	II	1.1G		None	62	None	None	Forbidden	Forbidden	07	
	Signals, railway track, explosive	1.4S	UN0193	II	1.4S		None	62	None	None	Forbidden	100 kg	05	
	Signals, railway track, explosive	1.3G	UN0492		1.3G		None	62	None	None	Forbidden	Forbidden	07	
	Signals, railway track, explosive	1.4G	UN0493		1.4G		None	62	None	None	Forbidden	75 kg	06	
	Signals, ship distress, water-activated, see Contrivances, water-activated, etc.													
	Signals, smoke	1.1G	UN0196	II	1.1G		None	62	None	None	Forbidden	Forbidden	07	
	Signals, smoke	1.4G	UN0197	II	1.4G		None	62	None	None	Forbidden	75 kg	06	
	Signals, smoke	1.2G	UN0313	II	1.2G		None	62	None	None	Forbidden	Forbidden	07	
	Signals, smoke	1.3G	UN0487	II	1.3G		None	62	None	None	Forbidden	Forbidden	07	
	Signals, smoke	1.4S	UN0507		1.4S		None	62	None	None	Forbidden	100 kg	05	
Silane	2.1	UN2203		2.1		None	302	None	None	Forbidden	Forbidden	E	40, 57, 104	
Silicofluoric acid, see Fluorosilicic acid.														
Silicon chloride, see Silicon tetrachloride.														
Silicon powder, amorphous	4.1	UN1346	III	4.1		A1, IB8, IP3, T1, TP33 A3, A6, B2, B6, T10	None	213	240	25 kg	100 kg	A	74	
Silicon tetrachloride	8	UN1818	II	8		TP2, TP7, TP13	None	202	242	1 L	30 L	C	40	
Silicon tetrafluoride	2.3	UN1859		2.3, 8			None	302	None	Forbidden	Forbidden	D	40	
Silver acetylide (dry)	Forbidden													

Silver arsenite	6.1	UN1683	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Silver azide (dry)	Forbidden											.....
Silver chlorite (dry)	Forbidden											.....
Silver cyanide	6.1	UN1684	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40, 52
Silver fulminate (dry)	Forbidden											.....
Silver nitrate	5.1	UN1493	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	.....
Silver oxalate (dry)	Forbidden											.....
Silver picrate (dry)	Forbidden											.....
Silver picrate, wetted with not less than 30 percent water, by mass.	4.1	UN1347	I	4.1	23	None	211	None	Forbidden	Forbidden	D	28, 36
Sludge, acid	8	UN1906	II	8	A3, A7, B2, IB2, N34, T8, TP2, TP28	None	202	242	Forbidden	30 L	C	14
Smokeless powder for small arms (100 pounds or less).	4.1	NA3178	I	4.1	16	None	171	None	Forbidden	7.3 kg	A	.....
Soda lime with more than 4 percent sodium hydroxide.	8	UN1907	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
Sodium	4.3	UN1428	I	4.3	A7, A8, A19, A20, B9, B48, B68, IB4, IP1, N34, T9, TP7, TP33, TP46	None	211	244	Forbidden	15 kg	D	52
Sodium aluminate, solid	8	UN2812	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
Sodium aluminate, solution	8	UN1819	III	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	52
Sodium aluminum hydride	4.3	UN2835	II	4.3	IB3, T4, TP1	154	203	241	5 L	60 L	A	52
Sodium ammonium vanadate	6.1	UN2863	II	6.1	A8, A19, A20, IB4, T3, TP33	151	212	242	Forbidden	50 kg	E	52
Sodium arsenite	6.1	UN2473	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Sodium arsenite, aqueous solutions	6.1	UN1686	II	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
Sodium arsenite, solid	6.1	UN2027	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Sodium azide	6.1	UN1687	II	6.1	IB8, IP2, IP4	153	212	242	25 kg	100 kg	A	36, 52, 91
Sodium bifluoride, see Sodium hydrogendifluoride.												.....
Sodium bisulfite, solution, see Bisulfites, aqueous solutions, n.o.s.												.....
Sodium borohydride	4.3	UN1426	I	4.3	B2, IB2, N34, T7, TP2	N40	211	242	Forbidden	15 kg	E	52
Sodium borohydride and sodium hydroxide solution, with not more than 12 percent sodium borohydride and not more than 40 percent sodium hydroxide by mass.	8	UN3320	II	8		154	202	242	1 L	30 L	A	52
Sodium bromate	5.1	UN1494	III	8	B2, IB3, N34, T4, TP2	154	203	241	5 L	60 L	A	52
Sodium cacodylate	6.1	UN1688	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Sodium carbonate peroxyhydrate	5.1	UN3378	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	25 kg	100 kg	A	52
					IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13, 48, 75
						152	213	240	25 kg	100 kg	A	13, 48, 75

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Sodium chlorate	5.1	UN1495	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
	Sodium chlorate, aqueous solution	5.1	UN2428	II	5.1	A2, IB2, T4, TP1	152	202	241	1 L	5 L	B	56, 58, 133
	Sodium chlorate mixed with dinitro-toluene, see Explosive blasting, type C.			III	5.1	A2, IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 68, 133
	Sodium chlorite	5.1	UN1496	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	None	212	242	5 kg	25 kg	A	56, 58
	Sodium chloroacetate	6.1	UN2659	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Sodium cuprocyanide, solid	6.1	UN2316	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40, 52
	Sodium cuprocyanide, solution	6.1	UN2317	I	6.1	T14, TP2, TP13	None	201	243	1 L	30 L	B	52
	Sodium cyanide, solid	6.1	UN1889	I	6.1	B69, B77, IB7, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	B	52
	Sodium cyanide solution	6.1	UN3414	I	6.1	B69, B77, N74, N75, T14, TP2, TP13	None	201	243	1 L	30 L	B	52
				II	6.1	B69, B77, IB2, N74, N75, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	52
				III	6.1	B69, B77, IB3, N74, N75, T7, TP2, TP13, TP28	153	203	241	60 L	220 L	A	52
	Sodium dichloroisocyanurate or So-dium dichloro-s-triazineirone, see Dichloroisocyanuric acid etc.												
	Sodium dinitro-o-cresolate, dry or wetted with less than 15 percent water, by mass.	1.3C	UN0234	II	1.3C		None	62	None	Forbidden	Forbidden	10	5E
	Sodium dinitro-o-cresolate, wetted with not less than 10% water, by mass.	4.1	UN3369	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Sodium dinitro-o-cresolate, wetted with not less than 15 percent water, by mass.	4.1	UN1348	I	4.1, 6.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36
	Sodium dithionite or Sodium hydro-sulfite.	4.2	UN1384	II	4.2	A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	E	13

Sodium fluoride, solid	6.1	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
Sodium fluoride solution	6.1	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52
Sodium fluoroacetate	6.1	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	5 kg	E	
Sodium fluorosulfate	6.1	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
Sodium hydrate, see Sodium hydroxide, solid											
Sodium hydride	4.3	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Sodium hydrogendifluoride	8	II	8	IB8, IP2, IP4, N3, N34, T3, TP33	154	212	240	15 kg	50 kg	A	12, 26, 40, 52, 52
Sodium hydrosulfide, with less than 25 percent water of crystallization	4.2	II	4.2	A7, A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	A	
Sodium hydrosulfide with not less than 25 percent water of crystallization	8	II	8	A7, IB8, IP2, IP4, T7, TP2	154	212	240	15 kg	50 kg	A	52
Sodium hydrosulfite, see Sodium dithionite											
Sodium hydroxide, solid	8	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
Sodium hydroxide solution	8	III	8	B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	52
Sodium hypochlorite, solution, see Hypochlorite solutions etc.											
Sodium metal, liquid alloy, see Alkali metal alloys, liquid, n.o.s.											
Sodium methylete	4.2	II	4.2, 8	A7, A19, IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	B	
Sodium methylete solutions in alcohol	3	II	3, 8	IB2, T7, TP1, TP8	150	202	243	1 L	5 L	B	
Sodium monoxide	8	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	
Sodium nitrate	5.1	III	5.1	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
Sodium nitrate and potassium nitrate mixtures	5.1	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
Sodium nitrite	5.1	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
Sodium pentachlorophenate	6.1	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Sodium perborate monohydrate	5.1	III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13, 48, 75
Sodium perchlorate	5.1	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Sodium permanganate	5.1	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
Sodium peroxide	5.1	I	5.1	A20, IB5, IP1, N34	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
Sodium peroxoborate, anhydrous	5.1	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13, 25
Sodium persulfate	5.1	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	58, 145
Sodium phosphide	4.3	I	4.3, 6.1	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
Sodium picramate, dry or wetted with less than 20 percent water, by mass	1.3C	II	1.3C		None	62	None	Forbidden	Forbidden	10	5E

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
	Sodium picramate, wetted with not less than 20 percent water, by mass.	4.1	UN1349	I	4.1	23, A8, A19, N41	None	211	None	Forbidden	15 kg	E	28, 36
	Sodium peroxy persulfate	Forbidden											
	Sodium picryl peroxide	Forbidden											
	Sodium potassium alloys, see Potassium sodium alloys.												
	Sodium selenate, see Selenates or Selenites.												
	Sodium sulfide, anhydrous or Sodium sulfide with less than 30 percent water of crystallization.	4.2	UN1385	II	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	A	52
	Sodium sulfide, hydrated with not less than 30 percent water.	8	UN1849	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
	Sodium superoxide	5.1	UN2547	I	5.1	A20, IB6, IP1, N34	None	211	None	Forbidden	15 kg	E	13, 52, 66, 75
G	Sodium cyanide	Forbidden	UN3244	II	8	49, IB5, T3, TP33	154	212	240	15 kg	50 kg	B	40
G	Solids containing corrosive liquid, n.o.s.	4.1	UN3175	II	4.1	47, IB6, IP2, T3, TP33	151	212	240	15 kg	50 kg	B	
G	Solids containing flammable liquid, n.o.s.	4.1	UN3175	II	4.1	47, IB6, IP2, T3, TP33	151	212	240	15 kg	50 kg	B	
G	Solids containing toxic liquid, n.o.s.	6.1	UN3243	II	6.1	48, IB2, T2, TP33	153	212	240	25 kg	100 kg	B	40
	Sounding devices, explosive	1.2F	UN0204	II	1.2F		None	62	62	Forbidden	Forbidden	08	
	Sounding devices, explosive	1.1F	UN0296	II	1.1F		None	62	62	Forbidden	Forbidden	08	
	Sounding devices, explosive	1.1D	UN0374	II	1.1D		None	62	62	Forbidden	Forbidden	07	
	Sounding devices, explosive	1.2D	UN0375	II	1.2D		None	62	62	Forbidden	Forbidden	07	
	Spirits of salt, see Hydrochloric acid												
	Squibs, see Igniters etc												
	Stannic chloride, anhydrous	8	UN1827	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	
	Stannic chloride pentahydrate	8	UN2440	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Stannic phosphide	4.3	UN1433	I	4.3, 6.1	A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
	Steel swarf, see Ferrous metal borings, etc.												
	Stibine	2.3	UN2676		2.3, 2.1	1	None	304	None	Forbidden	Forbidden	D	40
	Storage batteries, wet, see Batteries, wet etc.												
	Strontium arsenite	6.1	UN1691	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	

Strontium chlorate	5.1	UN1506	II	5.1	A1, A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Strontium nitrate	5.1	UN1507	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	.....
Strontium perchlorate	5.1	UN1508	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Strontium peroxide	5.1	UN1509	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 66, 75
Strontium phosphide	4.3	UN2013	I	4.3, 6.1	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
Strychnine or Strychnine salts	6.1	UN1692	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
Strychnine acid, see Trinitroresorcinol, etc.												
Styrene monomer, stabilized	3	UN2055	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
Substances, explosive, n.o.s	1.1L	UN0357	II	1.1L	.....	None	62	None	Forbidden	Forbidden		8E, 14E, 15E, 17E
G Substances, explosive, n.o.s	1.2L	UN0358	II	1.2L	.....	None	62	None	Forbidden	Forbidden		8E, 14E, 15E, 17E
G Substances, explosive, n.o.s	1.3L	UN0359	II	1.3L	.....	None	62	None	Forbidden	Forbidden		8E, 14E, 15E, 17E
G Substances, explosive, n.o.s	1.1A	UN0473	II	1.1A	111	None	62	None	Forbidden	Forbidden	12	.....
G Substances, explosive, n.o.s	1.1C	UN0474	II	1.1C	.....	None	62	None	Forbidden	Forbidden	10	.....
G Substances, explosive, n.o.s	1.1D	UN0475	II	1.1D	.....	None	62	None	Forbidden	Forbidden	10	.....
G Substances, explosive, n.o.s	1.1G	UN0476	II	1.1G	.....	None	62	None	Forbidden	Forbidden	08	.....
G Substances, explosive, n.o.s	1.3C	UN0477	II	1.3C	.....	None	62	None	Forbidden	Forbidden	10	.....
G Substances, explosive, n.o.s	1.3G	UN0478	II	1.3G	.....	None	62	None	Forbidden	Forbidden	10	.....
G Substances, explosive, n.o.s	1.4C	UN0479	II	1.4C	.....	None	62	None	Forbidden	Forbidden	08	.....
G Substances, explosive, n.o.s	1.4D	UN0480	II	1.4D	.....	None	62	None	Forbidden	75 kg	09	.....
G Substances, explosive, n.o.s	1.4S	UN0481	II	1.4S	.....	None	62	None	Forbidden	75 kg	05	.....
G Substances, explosive, n.o.s	1.4G	UN0485	II	1.4G	.....	None	62	None	Forbidden	75 kg	08	.....
G Substances, explosive, very insensitive, n.o.s. or Substances, E, V, I, n.o.s.	1.5D	UN0482	II	1.5D	.....	None	62	None	Forbidden	Forbidden	10	.....
Substituted nitrophenol pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	UN2780	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
Substituted nitrophenol pesticides, liquid, toxic.	6.1	UN3014	II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
			I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Substituted nitrophenol pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN3013	I	6.1, 3	T14, TP2, TP13, TP27	None ...	201 ...	243 ...	30 L	B	40	
	Substituted nitrophenol pesticides, solid, toxic.	6.1	UN2779	III	6.1, 3	IB2, T11, TP2, TP13, TP27	153 ...	202 ...	243 ...	60 L	B	40	
	Substituted nitrophenol pesticides, liquid, toxic.	6.1	UN2779	I	6.1	B1, IB3, T7, TP2, TP28	153 ...	203 ...	242 ...	220 L	A	40	
	Sulfur	Forbidden		III	9	IB7, IP1, T6, TP33	None ...	211 ...	242 ...	50 kg	A	40	
	Sulfur and chlorate, loose mixtures of	Forbidden		I	6.1	IB8, IP2, IP4, T3, TP33	153 ...	212 ...	242 ...	25 kg	A	40	
	Sulfur chlorides	Forbidden		III	6.1	IB8, IP3, T1, TP33	153 ...	213 ...	240 ...	100 kg	A	40	
	Sulfur dioxide	2.3	UN1079	I	8	5, A3, A7, A10, B10, B77, N34, T20, TP2	None ...	201 ...	243 ...	2.5 L	C	40	
	Sulfur dioxide solution, see Sulfurous acid.	2.2	UN1080	I	2.2	3, B14, T50, TP19	None ...	304 ...	314, 315	Forbidden	D	40	
	Sulfur hexafluoride	2.2	UN1080	I	2.2		None ...	304 ...	314, 315	Forbidden	D	40	
	Sulfur, molten	9	NA2448	III	9	30, IB3, T1, TP3	None ...	213 ...	247 ...	Forbidden	C	61	
	Sulfur, molten	4.1	UN2448	III	4.1	30, IB1, T1, TP3	None ...	213 ...	247 ...	Forbidden	C	74	
	Sulfur tetrafluoride	2.3	UN2418	I	2.3, 8	5, A3, A7, A10, B10, B77, N34, T20, TP4, TP13, TP25, TP26, TP38, TP45	None ...	302 ...	245 ...	Forbidden	D	40, 52	
	Sulfur trioxide, stabilized	8	UN1829	I	8, 6.1		None ...	227 ...	244 ...	Forbidden	A	40	
	Sulfuretted hydrogen, see Hydrogen sulfide.												
	Sulfuric acid, fuming with less than 30 percent free sulfur trioxide.	8	UN1831	I	8	A3, A7, N34, T20, TP2, TP13	None ...	201 ...	243 ...	2.5 L	C	14, 40	
	Sulfuric acid, fuming with 30 percent or more free sulfur trioxide.	8	UN1831	I	8, 6.1	2, B9, B14, B32, B74, B77, B84, N34, T20, TP2, TP13	None ...	227 ...	244 ...	Forbidden	C	14, 40	

UN/NA ID	Proper Shipping Name	Class	Division	Subdivision	HAZARDOUS MATERIALS TABLE REFERENCE	Quantity	Special Provisions	Forbidden	Quantity	Special Provisions	Quantity	Special Provisions	
8 UN1832	Sulfuric acid, spent	8	UN1832	II	8	A3, A7, B2, B63, B84, IB2, N34, T8, TP2	None	202	242	Forbidden	30 L	C	14
8 UN1830	Sulfuric acid with more than 51 percent acid.	8	UN1830	II	8	A3, A7, B3, B83, B84, IB2, N34, T8, TP2	154	202	242	1 L	30 L	C	14
8 UN2796	Sulfuric acid with not more than 51% acid.	8	UN2796	II	8	A3, A7, B2, B15, IB2, N6, N34, T8, TP2	154	202	242	1 L	30 L	B	
8 UN1833	Sulfuric and hydrofluoric acid mixtures, see Hydrofluoric and sulfuric acid mixtures.	8	UN1833	II	8	B3, IB2, T7, TP2	154	202	242	1 L	30 L	B	40
8 UN1834	Sulfuric anhydride, see Sulfur trioxide, stabilized.	8	UN1834	I	8, 6.1	1, B6, B9, B10, B14, B30, B77, N34, T22, TP2, TP38, TP44	None	226	244	Forbidden	Forbidden	C	40
2.3 UN2191	Sulfuric acid	2.3	UN2191		2.3		None	304	314, 315	Forbidden	Forbidden	D	40
3 UN1999	Sulfuryl fluoride	3	UN1999	II	3	149, B13, IB2, T3, TP3, TP29	150	202	242	5 L	60 L	B	
6.1 UN1700	Tars, liquid including road asphalt and oils, bitumen and cut backs.	6.1	UN1700	III	3	B1, B13, IB3, T1, TP3	150	203	242	60 L	220 L	A	
6.1 NA1693	Tear gas candles	6.1	NA1693	II	6.1		None	340	None	Forbidden	Forbidden	D	40
	Tear gas cartridges, see Ammunition, tear-producing, etc.												
	Tear gas devices with more than 2 percent tear gas substances, by mass.												
	Tear gas devices, with not more than 2 percent tear gas substances, by mass, see Aerosols, etc.												
	Tear gas grenades, see Tear gas candles.												
6.1 UN1693	Tellurium compound, liquid, n.o.s.	6.1	UN1693	I	6.1	IB2	None	201	None	Forbidden	Forbidden	D	40
6.1 UN3448	Tellurium compound, solid, n.o.s.	6.1	UN3448	I	6.1	T6, TP33	None	202	None	Forbidden	5 L	D	40
6.1 UN3284	Tellurium compound, n.o.s.	6.1	UN3284	I	6.1	IB8, IP2, IP4, T3, TP33	None	211	242	Forbidden	Forbidden	D	40
2.3 UN2195	Tellurium hexafluoride	2.3	UN2195	III	6.1	IB7, IP1, T6, TP33	None	212	242	Forbidden	25 kg	D	40
3 UN2319	Terpene hydrocarbons, n.o.s.	3	UN2319	III	3	IB8, IP2, IP4, T3, TP33	153	212	242	5 kg	100 kg	B	
3 UN2541	Terpinolene	3	UN2541	III	3	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
6.1 UN2504	Tetraazido benzene quinone	6.1	UN2504	III	2.3, 8	B1, IB3, T4, TP1, TP29	None	302	None	Forbidden	Forbidden	D	40
6.1 UN1702	Tetra bromoethane	6.1	UN1702	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
6.1 UN1897	1,1,2,2-Tetrachloroethane	6.1	UN1897	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40
6.1 UN1704	Tetra chloroethylene	6.1	UN1704	III	6.1	IB2, N36, T7, TP2	153	202	243	5 L	60 L	A	40
3 UN1292	Tetraethyl dithiophosphosphate	3	UN1292	III	3	IB3, N36, T4, TP1	153	203	241	60 L	220 L	A	40
	Tetraethyl silicate					IB2, T7, TP2	153	212	242	25 kg	100 kg	D	40
						B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	Tetraethylammonium perchlorate (dry)	Forbidden											
	Tetraethylenepentamine	8	UN2320	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	52
	1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a	2.2	UN3159		2.2	T50	306	304	314	75 kg	150 kg	A	
	Tetrafluoroethylene, stabilized	2.1	UN1081		2.1		306	304	None	Forbidden	150 kg	E	40
	Tetrafluoromethane or Refrigerant gas R 14	2.2	UN1982		2.2		None	302	None	75 kg	150 kg	A	
	1,2,3,6-Tetrahydrobenzaldehyde	3	UN2498	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Tetrahydrofuran	3	UN2056	II	3	IB2, T4, TP1	None	202	242	5 L	60 L	B	
	Tetrahydrofurfurylamine	3	UN2943	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Tetrahydrophthalic anhydrides with more than 0.05 percent of maleic anhydride	8	UN2898	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	1,2,3,6-Tetrahydropropidine	3	UN2410	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Tetrahydrothiophene	3	UN2412	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Tetramethylammonium hydroxide, solid	8	UN3423	II	8	B2, IB8, IP2, IP4, T3, TP33	154	213	240	15 kg	50 kg	A	52
	Tetramethylammonium hydroxide solution	8	UN1835	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	52
	Tetramethylene diperoxide	Forbidden		III	8	B2, IB3, T7, TP2	154	203	241	5 L	60 L	A	52
	Tetramethylene dicarbamide	Forbidden											
	Tetramethylsilane	3	UN2749	I	3	A7, T14, TP2	None	201	243	Forbidden	30 L	D	
	Tetranitro glycerin	Forbidden			1.1D		None	62	None	Forbidden	Forbidden	10	
	Tetranitroaniline	5.1	UN0207	I	5.1	2, B32, T20, TP2, TP13, TP38, TP44	None	227	None	Forbidden	Forbidden	D	40, 66
	Tetranitromethane	5.1	UN1510	I	6.1		None						
	2,3,4,6-Tetranitrophenol	Forbidden											
	2,3,4,6-Tetranitrophenyl methyl nitramine	Forbidden											
	2,3,4,6-Tetranitrophenyl nitramine	Forbidden											
	2,3,4,6-Tetranitrophenyl nitramine	Forbidden											
	Tetranitrosorcinol (dry)	Forbidden											
	2,3,5,6-Tetranitroso-1,4-dinitrobenzene	Forbidden											
	2,3,5,6-Tetranitroso nitrobenzene (dry)	Forbidden											
	Tetrapropylthioitanate	3	UN2413	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	

+

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi- fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
	<i>Tin chloride, fuming, see Stannic chloride, anhydrous.</i>												
	<i>Tin perchloride or Tin tetrachloride, see Stannic chloride, anhydrous.</i>												
	Tinctures, medicinal	3	UN1293	II III	3 3	IB2, T4, TP1, TP8 B1, IB3, T2, TP1	150 150	202 203	242 242	5 L 60 L	60 L 220 L	B A	
	<i>Tinning flux, see Zinc chloride</i>												
	Tires and tire assemblies, see Air, compressed or Nitrogen, com-pressed.												
	Titanium disulphide	4.2	UN3174	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	A	
	Titanium hydride	4.1	UN1871	II	4.1	A19, A20, IB4, N34, T3, TP33	None	212	241	15 kg	50 kg	E	
	Titanium powder, dry	4.2	UN2546	I II	4.2 4.2	A19, A20, IB6, IP2, N5, N34, T3, TP33	None	211 212	242 241	Forbidden 15 kg	Forbidden 50 kg	D D	
	Titanium powder, wetted with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns	4.1	UN1352	III II	4.2 4.1	IB8, IP3, T1, TP33 A19, A20, IB6, IP2, N34, T3, TP33	None None	213 212	241 240	25 kg 15 kg	100 kg 50 kg	D E	74
	Titanium sponge granules or Titanium sponge powders.												
	Titanium tetrachloride	4.1	UN2878	III	4.1	A1, IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	D	74
+		8	UN1838	II	8, 6.1	2, B7, B9, B14, B32, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
	Titanium trichloride mixtures	8	UN2869	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	40
				III	8	A7, IB8, IP3, N34, T1, TP33	154	213	240	25 kg	100 kg	A	40
	Titanium trichloride, pyrophoric or Titanium trichloride mixtures, pyrophoric.	4.2	UN2441	I	4.2, 8	N34	None	181	244	Forbidden	Forbidden	D	40
	TNT mixed with aluminum, see Tritonal.												

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
G	Toxic by inhalation liquid, oxidizing, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m ³ and saturated vapor concentration greater than or equal to 500 LC50.	6.1	UN3387	I	6.1, 5.1.	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, oxidizing, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m ³ and saturated vapor concentration greater than or equal to 10 LC50.	6.1	UN3388	I	6.1, 5.1.	2, B9, B14, B32, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, corrosive, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m ³ and saturated vapor concentration greater than or equal to 500 LC50.	6.1	UN3389	I	6.1, 8	1, B9, B14, B30, T22, TP2, TP13, TP27, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, corrosive, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m ³ and saturated vapor concentration greater than or equal to 10 LC50.	6.1	UN3390	I	6.1, 8	2, B9, B14, B32, T20, TP2, TP13, TP27, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
G	Toxic liquid, corrosive, inorganic, n.o.s.	6.1	UN3289	I	6.1, 8	T14, TP2, TP13, TP27	None	201	243	0.5 L	2.5 L	A	.....
G	Toxic liquid, inorganic, n.o.s.	6.1	UN3287	II	6.1, 8	IB2, T11, TP2, TP27	153	202	243	1 L	30 L	A	.....
G	Toxic liquids, corrosive, organic, n.o.s.	6.1	UN2927	III	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	A	.....
G	Toxic liquids, corrosive, organic, n.o.s.	6.1	UN2929	I	6.1, 8	T14, TP2, TP13, TP27	153	201	243	0.5 L	220 L	A	40
G	Toxic liquids, flammable, organic, n.o.s.	6.1	UN2810	II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	1 L	30 L	B	40
G	Toxic, liquids, organic, n.o.s.	6.1	UN2810	II	6.1	IB2, T11, TP2, TP13, TP27	153	201	243	1 L	30 L	B	40
G	Toxic, liquids, organic, n.o.s.	6.1	UN2810	III	6.1	IB3, T7, TP1, TP28	153	202	243	5 L	60 L	B	40
G	Toxic, liquids, organic, n.o.s.	6.1	UN2810	III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40

Class	Description	UN Number	Subclass	Label	Quantity	Special Provisions	Other	Quantity	Special Provisions	Other
G	Toxic liquids, oxidizing, n.o.s.	UN3122	6.1	5.1	I	6.1	None	201	243	2.5 L C
G	Toxic liquids, water-reactive, n.o.s.	UN3123	6.1	5.1	II	6.1	IB2	202	243	5 L C
G	Toxic solids, corrosive, inorganic, n.o.s.	UN3290	6.1	4.3	I	6.1	A4	201	243	1 L E
G	Toxic solids, corrosive, organic, n.o.s.	UN3288	6.1	6.1	II	6.1	IB2	202	243	5 L E
G	Toxic solids, oxidizing, n.o.s.	UN2928	6.1	6.1	I	6.1, 8	IB7, T6, TP33	211	242	25 kg A
G	Toxic solids, flammable, organic, n.o.s.	UN2930	6.1	4.1	II	6.1, 8	IB6, IP2, T3, TP33	212	242	50 kg B
G	Toxic solids, organic, n.o.s.	UN2811	6.1	4.1	II	6.1	IB7, T6, TP33	211	242	15 kg B
G	Toxic solids, oxidizing, n.o.s.	UN3086	6.1	5.1	I	6.1	IB8, IP2, IP4, T3, TP33	212	242	50 kg B
G	Toxic solids, self-heating, n.o.s.	UN3124	6.1	4.2	II	6.1	IB7, T6, TP33	211	242	50 kg B
G	Toxic solids, water-reactive, n.o.s.	UN3125	6.1	4.2	II	6.1	IB8, IP2, T3, TP33	212	242	50 kg B
G	Toxins, extracted from living sources, liquid, n.o.s.	UN3172	6.1	4.3	II	6.1	A5, T6, TP33	211	242	100 kg A
G	Toxins, extracted from living sources, solid, n.o.s.	UN3462	6.1	6.1	I	6.1	IB6, IP2, T3, TP33	212	242	200 kg A
D	Toy Caps	NA0337	1.4S	1.4S	III	6.1	141	201	243	30 L B
D	Tracers for ammunition	UN0212	1.3G	1.3G	III	6.1	141, IB2	202	243	5 L B
D	Tracers, see Vehicle, etc	UN0306	1.4S	1.4S	II	6.1	141, IB3	203	241	60 L B
D	Tri-(<i>n</i> -nitroxyethyl) ammonium nitrate	Forbidden	Forbidden	Forbidden	II	6.1	141, IB7, IP1, T6, TP33	211	243	50 kg B

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Triallyl borate	6.1	UN2609	III	6.1	IB3	153	203	241	60 L	220 L	A	13
	Triallylamine	3	UN2610	III	3, 8	B1, IB3, T4, TP1	None	203	242	5 L	60 L	A	40
	Triazine pesticides, liquid, flammable, toxic, flash point less than 23 degrees C.	3	UN2764	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
	Triazine pesticides, liquid, toxic			II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Triazine pesticides, liquid, toxic	6.1	UN2998	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	Triazine pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	Triazine pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN2997	III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
				I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
	Triazine pesticides, solid, toxic	6.1	UN2763	III	6.1, 3	IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
				I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Tributylamine	6.1	UN2542	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Tributylphosphane	4.2	UN3254	I	4.2	T21, TP7, TP33	None	211	242	Forbidden	Forbidden	D	136
	Trichloro-s-triazine/none dry, with more than 39 percent available chlorine, see Trichloroisocyanuric acid, dry.												
	Trichloroacetic acid	8	UN1839	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	
	Trichloroacetic acid, solution	8	UN2564	II	8	A3, A6, A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	B	
				III	8	A3, A6, A7, IB3, N34, T4, TP1	154	203	241	5 L	60 L	B	8
	Trichloroacetyl chloride	8	UN2442	II	8, 6.1	2, B9, B14, B32, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Trichlorobenzene, liquid	6.1	UN2321	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40
	Trichlorobutene	6.1	UN2322	III	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	25, 40
	1,1,1-Trichloroethane	6.1	UN2831	III	6.1	IB3, N36, T4, TP1	153	203	241	60 L	220 L	A	40
	Trichloroethylene	6.1	UN1710	III	6.1	IB3, N36, T4, TP1	153	203	241	60 L	220 L	A	40

Proper shipping name	UN number	HAZARDOUS MATERIALS TABLE	Quantity	Special provisions	Proper shipping name	UN number	HAZARDOUS MATERIALS TABLE	Quantity	Special provisions
Trichloroacetic acid, dry	5.1	UN2468	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	13
Trichloromethyl perchlorate	Forbidden				N34, T14, TP2, TP7, TP13	None	201	244	21, 28, 40, 49, 100
Trichlorosilane	4.3	UN1295	I	4.3, 3, 8					
Tricresyl phosphate with more than 3 percent ortho isomer	6.1	UN2574	II	6.1	A3, IB2, N33, N34, T7, TP2	153	202	243	
Triethyl phosphite	3	UN2323	III	3	B1, IB3, T2, TP1	150	203	242	
Triethylamine	3	UN1296	II	3, 8	IB2, T7, TP1	150	202	243	40
Triethylenetetramine	8	UN2259	II	8	B2, IB2, T7, TP2	154	202	242	40, 52
Trifluoroacetic acid	8	UN2699	I	8	A3, A6, A7, B4, N3, N34, N36, T10, TP2	None	201	243	12, 40
Trifluoroacetyl chloride	2.3	UN3057		2.3, 8	2, B7, B9, B14, T50, TP21	None	304	314, 315	40
Trifluorochloroethylene, stabilized	2.3	UN1082		2.3, 2.1	3, B14, T50	None	304	314, 315	40
Trifluoromethane or Refrigerant gas R 23	2.2	UN1984		2.2		306	304	314, 315	
Trifluoromethane, refrigerated liquid	2.2	UN3136		2.2	T75, TP5	306	None	314, 315	
1,1,1-Trifluoroethane or Refrigerant gas, R 143a	2.1	UN2035		2.1	T50	306	304	314, 315	40
2-Trifluoromethylaniline	6.1	UN2942	III	6.1	IB3	153	203	241	
3-Trifluoromethylaniline	6.1	UN2948	II	6.1	IB2, T7, TP2	153	202	243	40
Triforoxime trinitrate	Forbidden								
Trisobutylene	3	UN3324	III	3	B1, IB3, T4, TP1	150	203	242	
Trisopropyl borate	3	UN2616	II	3	IB2, T4, TP1	150	202	242	
Trimethoxysilane	6.1	NA9269	I	6.1, 3	B1, IB3, T2, TP1	150	203	242	
Trimethyl borate	3	UN2416	II	3	2, B9, B14, B32, T20, TP4, TP13, TP38, TP45	None	227	244	40
Trimethyl phosphite	3	UN3329	III	3	B1, IB3, T2, TP1	150	202	242	
1,3,5-Trimethyl-2,4,6-trinitrobenzene	Forbidden								
Trimethylacetyl chloride	6.1	UN2438	I	6.1, 8, 3	2, B3, B9, B14, B32, N34, T20, TP2, TP13, TP38, TP45	None	227	244	25, 40
Trimethylamine, anhydrous	2.1	UN1083		2.1	N87, T50	306	304	314, 315	40
Trimethylamine, aqueous solutions with not more than 50 percent trimethylamine by mass	3	UN1297	I	3, 8	T11, TP1	None	201	243	40, 135
1,3,5-Trimethylbenzene	3	UN2325	III	3, 8	B1, IB2, T7, TP1	150	202	243	40, 41
Trimethylchlorosilane	3	UN1298	III	3, 8	B1, IB3, T7, TP1	150	203	242	40, 41
Trimethylcyclohexylamine	8	UN2326	III	8	B1, IB3, T2, TP1	150	203	242	
Trimethylene glycol dipercarbonate	Forbidden				A3, A7, B77, N34, T10, TP2, TP7, TP13	None	206	243	40
Trimethylhexamethylene diisocyanate	6.1	UN2328	III	6.1	IB3, T4, TP1	153	203	241	
Trimethylhexamethylenediamines	8	UN2327	III	8	IB3, T4, TP1	154	203	241	

D

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Trimethyl nitromethane trinitrate	Forbidden	UN0216	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	Trinitro-meta-cresol	1.1D											
	2,4,6-Trinitro-1,3-diazobenzene	Forbidden											
	2,4,6-Trinitro-1,3,5-triazido benzene (dry)	Forbidden											
	Trinitroacetic acid	Forbidden											
	Trinitroacetamide	Forbidden											
	Trinitroamine cobalt	Forbidden											
	Trinitroaniline or Picramide	1.1D	UN0153	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitroanisole	1.1D	UN0213	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrobenzene, wetted, with not less than 10% water, by mass.	4.1	UN3367	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrobenzene, dry or wetted with less than 30 percent water, by mass.	1.1D	UN0214	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrobenzene, wetted with not less than 30 percent water, by mass.	4.1	UN1354	I	4.1	23, A2, A8, A19, N41	None	211	None	0.5 kg	0.5 kg	E	28
	Trinitrobenzenesulfonic acid	1.1D	UN0386	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	Trinitrobenzoic acid, dry or wetted with less than 30 percent water, by mass.	1.1D	UN0215	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrobenzoic acid, wetted with not less than 10% water by mass.	4.1	UN3368	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrobenzoic acid, wetted with not less than 30 percent water, by mass.	4.1	UN1355	I	4.1	23, A2, A8, A19, N41	None	211	None	0.5 kg	0.5 kg	E	28
	Trinitrochlorobenzene or Picryl chloride.	1.1D	UN0155	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrochlorobenzene (picryl chloride), wetted, with not less than 10% water by mass.	4.1	UN3365	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitroethanol	Forbidden											
	Trinitroethylnitrate	Forbidden											
	Trinitrofluorenone	1.1D	UN0387	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitromethane	Forbidden											
	1,3,5-Trinitronaphthalene	Forbidden											
	Trinitronaphthalene	1.1D	UN0217	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Trinitrophenetole	1.1D	UN0218	II	1.1D		None	62	None	Forbidden	Forbidden	10	

Tritrophenol (picric acid), wetted, with not less than 10 percent water by mass.	4.1	UN3364	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
Tritrophenol or Picric acid, dry or wetted with less than 30 percent water, by mass.	1.1D	UN0154	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
Tritrophenol, wetted or Picric acid, wetted, with not less than 30 percent water by mass.	4.1	UN1344	I	4.1	23, A8, A19, N41	None	211	None	1 kg	15 kg	E	28, 36
2,4,6-Tritrophenyl guanidine (dry)	Forbidden											
2,4,6-Tritrophenyl nitramine	Forbidden											
2,4,6-Tritrophenyl trimethylol methyl nitramine trinitrate (dry).	Forbidden											
Tritrophenylmethyl nitramine or Tet-yl.	1.1D	UN0208	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Tritroresorcinol or Styphnic acid, dry or wetted with less than 20 percent water, or mixture of alcohol and water, by mass.	1.1D	UN0219	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
Tritroresorcinol, wetted or Styphnic acid, wetted with not less than 20 percent water, or mixture of alcohol and water by mass.	1.1D	UN0394	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
2,4,6-Tritroso-3-methyl nitraminoisole.	Forbidden											
Tritrotriamine cobalt nitrate	Forbidden											
Tritrololeuene and Tritrobenzene mixtures or TNT and trinitrobenzene mixtures or TNT and hexanitrostilbene mixtures or Tritrololeuene and hexanitrostilbene mixtures.	1.1D	UN0388	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Tritrololeuene mixtures containing Tritrobenzene	1.1D	UN0389	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Hexanitrostilbene or TNT mixtures containing trinitrobenzene and hexanitrostilbene.	1.1D	UN0209	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Tritrololeuene or TNT, dry or wetted with less than 30 percent water, by mass.	4.1	UN3366	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
Tritrololeuene (TNT), wetted, with not less than 10 percent water by mass.	4.1	UN1356	I	4.1	23, A2, A8, A19, N41	None	211	None	0.5 kg	0.5 kg	E	28, 36
Tritrololeuene, wetted or TNT, wetted, with not less than 30 percent water by mass.	3	UN2260	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40
Tripropylamine	3	UN2057	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Tripropylene			III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identi-fication Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Tris-(1-aziridinyl)phosphine oxide, so-lution.	6.1	UN2501	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Tris, bis-fluoroamino diethoxy pro-pene (TVOPA).	Forbidden		III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Tritonal	1.1D	UN0390	II	1.1D	2, N86	None	62	None	Forbidden	Forbidden	10	
	Tungsten hexafluoride	2.3	UN2196		2.3, 8	B1, IB3, T2, TP1	None	338	None	Forbidden	Forbidden	D	40
	Turpentine	3	UN1299	III	3	T11, TP1, TP8, TP27	150	203	242	60 L	220 L	A	
	Turpentine substitute	3	UN1300	I	3	IB2, T4, TP1	None	201	243	1 L	30 L	B	
	Undecane	3	UN2330	III	3	B1, IB3, T2, TP1	150	202	242	5 L	60 L	B	
	Urea hydrogen peroxide	5.1	UN1511	III	5.1, 8	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Urea nitrate, dry or wetted with less than 20 percent water, by mass.	1.1D	UN0220	II	1.1D	A1, A7, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13
	Urea nitrate, wetted, with not less than 10 percent water, by mass.	4.1	UN3370	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Urea nitrate, wetted with not less than 20 percent water, by mass.	4.1	UN1357	I	4.1	23, 39, A8, A19, N41	None	211	None	1 kg	15 kg	E	28, 36
	Urea peroxide, see Urea hydrogen peroxide.												
	Valeraldehyde	3	UN2058	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Valeric acid, see Corrosive liquids, n.o.s.												
	Valeryl chloride	8	UN2502	II	8, 3	A3, A6, A7, B2, IB2, N34, T7, TP2	154	202	243	1 L	30 L	C	40
	Vanadium compound, n.o.s.	6.1	UN3285	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
	Vanadium oxytrichloride	8	UN2443	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	
	Vanadium pentoxide, non-fused form	6.1	UN2862	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Vanadium tetrachloride	8	UN2444	II	8	A3, A6, A7, B2, B16, IB2, N34, T7, TP2	154	202	242	Forbidden	30 L	C	40
	Vanadium trichloride	8	UN2475	III	8	A3, A6, A7, B4, N34, T10, TP2	153	213	240	100 kg	200 kg	A	40
	Vanadyl sulfate	6.1	UN2931	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	Vehicle, flammable gas powered	9	UN3166		9	135, 157	220	220	220	Forbidden	No limit	A	

G	Vehicle, flammable liquid powered Very signal cartridge, see Cartridges, signal.	UN3166	9	.....	9	.....	135, 157	220	.....	220	.....	.....	No limit	.....	No limit	A	.....	.....	.....	.....	.....	.....	.....	.....
	Vinyl acetate, stabilized	UN1301	3	.....	II	3	.....	202	.....	202	.....	242	.....	5 L	.....	B	.....	.....	.....	.....	.....	.....	.....	.....
	Vinyl bromide, stabilized	UN1085	2.1	.....	.....	2.1	.....	304	.....	304	.....	314, 315	.....	Forbidden	.....	B	.....	.....	.....	.....	.....	.....	.....	.....
	Vinyl butyrate, stabilized	UN2638	3	II	3	150	202	242	5 L	B
G	Vinyl chloride, stabilized	UN1086	2.1	.....	.....	2.1	.....	306	.....	304	.....	314, 315	.....	Forbidden	.....	B	.....	.....	.....	.....	.....	.....	.....	.....
	Vinyl chloroacetate	UN2589	6.1	.....	.....	6.1, 3	.....	153	.....	202	.....	243	.....	5 L	.....	A	.....	.....	.....	.....	.....	.....	.....	.....
	Vinyl ethyl ether, stabilized	UN1302	3	.....	I	3	.....	None	.....	201	.....	243	.....	1 L	.....	D	.....	.....	.....	.....	.....	.....	.....	.....
	Vinyl fluoride, stabilized	UN1860	2.1	.....	.....	2.1	.....	N86	.....	304	.....	314	.....	Forbidden	.....	E	.....	.....	.....	.....	.....	.....	.....	.....
	Vinyl isobutyl ether, stabilized	UN1304	3	.....	II	3	.....	150	.....	202	.....	242	.....	5 L	.....	B	.....	.....	.....	.....	.....	.....	.....	.....
	Vinyl methyl ether, stabilized	UN1087	2.1	.....	.....	2.1	.....	B44, T50	.....	304	.....	314, 315	.....	Forbidden	.....	B	.....	.....	.....	.....	.....	.....	.....	.....
	Vinyl nitrate polymer	Forbidden	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Vinylidene chloride, stabilized	UN1303	3	.....	I	3	.....	T12, TP2, TP7	.....	201	.....	243	.....	1 L	.....	E	.....	.....	.....	.....	.....	.....	.....	.....
	Vinylpyridines, stabilized	UN3073	6.1	.....	.....	6.1, 3,	.....	153	.....	202	.....	243	.....	1 L	.....	B	.....	.....	.....	.....	.....	.....	.....	.....
	Vinytoluenes, stabilized	UN2618	3	.....	III	3	.....	B1, IB3, T2, TP1	.....	203	.....	242	.....	60 L	.....	A	.....	.....	.....	.....	.....	.....	.....	.....
	Vinylchlorosilane, stabilized	UN1305	3	.....	II	3, 8	.....	None	.....	206	.....	243	.....	1 L	.....	B	.....	.....	.....	.....	.....	.....	.....	.....
	G	Warheads, rocket with burster or exploding charge.	UN0370	1.4D	II	1.4D	None	62	62	Forbidden	02
		Warheads, rocket with burster or exploding charge.	UN0371	1.4F	II	1.4F	None	62	None	Forbidden	08
G	Warheads, rocket with bursting charge.	UN0286	1.1D	.....	II	1.1D	.....	None	.....	62	.....	62	.....	Forbidden	.....	03	.....	.....	.....	.....	.....	.....	.....	.....
	Warheads, rocket with bursting charge.	UN0287	1.2D	.....	II	1.2D	.....	None	.....	62	.....	62	.....	Forbidden	.....	03	.....	.....	.....	.....	.....	.....	.....	.....
	Warheads, rocket with bursting charge.	UN0369	1.1F	.....	II	1.1F	.....	None	.....	62	.....	None	.....	Forbidden	.....	08	.....	.....	.....	.....	.....	.....	.....	.....
	Warheads, torpedo with bursting charge.	UN0221	1.1D	.....	II	1.1D	.....	None	.....	62	.....	62	.....	Forbidden	.....	03	.....	.....	.....	.....	.....	.....	.....	.....
	Water-reactive liquid, corrosive, n.o.s.	UN3129	4.3	.....	I	4.3, 8	.....	T14, TP2, TP7	.....	201	.....	243	.....	Forbidden	.....	D	.....	.....	.....	.....	.....	.....	.....	.....
	G	Water-reactive liquid, n.o.s.	UN3148	4.3	III	4.3, 8	None	202	242	1 L	E
		G	Water-reactive liquid, toxic, n.o.s.	UN3130	4.3	III	4.3	None	201	242	5 L	E
			G	Water-reactive solid, corrosive, n.o.s.	UN3131	4.3	I	4.3, 8	None	211	242	15 kg	D
				II	4.3, 8	.....	.....	IB6, IP2, T3, TP33	.....	151	.....	212	.....	15 kg	.....	E	.....	.....	.....	.....	.....	.....	.....	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi-cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)			(9) Quantity limitations (see §§ 173.27 and 175.75)		(10) Vessel stowage	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
G	Water-reactive solid, flammable, n.o.s.	4.3	UN3132	III	4.3, 8	IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	E	85
				I	4.3, 4.1	IB4, N40	None	211	242	Forbidden	15 kg	D	
				II	4.3, 4.1	IB4, T3, TP33	151	212	242	15 kg	50 kg	E	
				III	4.3, 4.1	IB6, T1, TP33	151	213	241	25 kg	100 kg	E	
G	Water-reactive solid, n.o.s.	4.3	UN2813	I	4.3	IB4, N40, T9, TP7, TP33	None	211	242	Forbidden	15 kg	E	40
				III	4.3	IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	40
				III	4.3	IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	E	40
G	Water-reactive, solid, oxidizing, n.o.s.	4.3	UN3133	II	4.3, 5.1	IB8, IP4, T1, TP33	None	214	214	Forbidden	Forbidden	E	40
				III	4.3, 5.1		None	214	214	Forbidden	Forbidden	E	40
G	Water-reactive solid, self-heating, n.o.s.	4.3	UN3135	I	4.3, 4.2	N40	None	211	242	Forbidden	15 kg	E	
				II	4.3, 4.2	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	E	
				III	4.3, 4.2	IB8, IP4, T1, TP33	None	213	241	25 kg	100 kg	E	
G	Water-reactive solid, toxic, n.o.s.	4.3	UN3134	I	4.3, 6.1	A8, IB4, IP1, N40	None	211	242	Forbidden	15 kg	D	
				II	4.3, 6.1	IB5, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	85
				III	4.3, 6.1	IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	E	85
	Wheel chair, electric, see Battery powered vehicle or Battery powered equipment.												
	White acid, see Hydrofluoric acid.												
I	White asbestos (chrysotile, actinolite, anthophyllite, tremolite).	9	UN2590	III	9	156, IB8, IP2, IP3, T1, TP33	155	216	240	200 kg	200 kg	A	34, 40
	Wood preservatives, liquid.	3	UN1306	II	3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
A I	Wool waste, wet	4.2	UN1387	III	4.2		151	213	240	Forbidden	Forbidden	A	
W	Xanthates	4.2	UN3342	II	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	D	40
				III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	40

Proper shipping name	UN number	Class	Division	Subdivision	Special provisions	Quantity	Label	Other	Additional
Xenon, compressed	2.2 UN2036	II	2.2	.....	.....	.....	.....	.....	.....
Xenon, refrigerated liquid (cryogenic liquids)	2.2 UN2591	II	2.2	.....	.....	.....	.....	.....	.....
Xylenes	3 UN1307	III	3	.....	.....	.....	.....	.....	.....
Xylenols, solid	6.1 UN2261	II	6.1	.....	.....	.....	.....	.....	.....
Xylenols, liquid	6.1 UN3430	II	6.1	.....	.....	.....	.....	.....	.....
Xylidines, liquid	6.1 UN1711	II	6.1	.....	.....	.....	.....	.....	.....
Xylidines, solid	6.1 UN3452	II	6.1	.....	.....	.....	.....	.....	.....
Xylyl bromide, liquid	6.1 UN1701	II	6.1	.....	.....	.....	.....	.....	.....
Xylyl bromide, solid	6.1 UN3417	II	6.1	.....	.....	.....	.....	.....	.....
p-Xylyl diazide	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....
Zinc ammonium nitrite	5.1 UN1512	II	5.1	.....	.....	.....	.....	.....	.....
Zinc arsenate or Zinc arsenite or Zinc arsenate and zinc arsenite mixtures	6.1 UN1712	II	6.1	.....	.....	.....	.....	.....	.....
Zinc ashes	4.3 UN1435	III	4.3	.....	.....	.....	.....	.....	.....
Zinc bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zinc bromate	5.1 UN2469	III	5.1	.....	.....	.....	.....	.....	.....
Zinc chlorate	5.1 UN1513	II	5.1	.....	.....	.....	.....	.....	.....
Zinc chloride, anhydrous	8 UN2331	III	8	.....	.....	.....	.....	.....	.....
Zinc chloride, solution	8 UN1840	III	8	.....	.....	.....	.....	.....	.....
Zinc cyanide	6.1 UN1713	I	6.1	.....	.....	.....	.....	.....	.....
Zinc dithionite or Zinc hydrosulfite	9 UN1931	III	9	.....	.....	.....	.....	.....	.....
Zinc edfry, see Diethylzinc	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zinc fluorosilicate	6.1 UN2855	III	6.1	.....	.....	.....	.....	.....	.....
Zinc hydrosulfite, see Zinc dithionite	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zinc manganate solution, see Zinc chloride, solution	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zinc nitrate	5.1 UN1514	II	5.1	.....	.....	.....	.....	.....	.....
Zinc permanganate	5.1 UN1515	II	5.1	.....	.....	.....	.....	.....	.....
Zinc peroxide	5.1 UN1516	II	5.1	.....	.....	.....	.....	.....	.....
Zinc phosphide	4.3 UN1714	I	4.3, 6.1	.....	.....	.....	.....	.....	.....
Zinc powder or Zinc dust	4.3 UN1436	I	4.3, 4.2	.....	.....	.....	.....	.....	.....
.....	.....	II	4.3, 4.2	.....	.....	.....	.....	.....	.....
.....	.....	III	4.3, 4.2	.....	.....	.....	.....	.....	.....
Zinc resinates	4.1 UN2714	III	4.1	.....	.....	.....	.....	.....	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifi- cation Numbers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations (see §§173.27 and 175.75)		(10) Vessel stowage	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
	Zinc selenate, see Selenates or Selenites. Zinc selenite, see Selenates or Selenites. Zinc silicofluoride, see Zinc fluorosilicate. Zirconium, dry, coiled wire, finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns). Zirconium, dry, finished sheets, strip or coiled wire. Zirconium hydride Zirconium nitrate Zirconium picramate, dry or wetted with less than 20 percent water, by mass. Zirconium picramate, wetted with not less than 20 percent water, by mass. Zirconium powder, dry												
		4.1	UN2858	III	4.1	A1	151	213	240	25 kg	100 kg	A	
		4.2	UN2009	III	4.2	A1, A19	None	213	240	25 kg	100 kg	D	
		4.1	UN1437	II	4.1	A19, A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	E	
		5.1	UN2728	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
		1.3C	UN0236	II	1.3C		None	62	None	Forbidden	Forbidden	10	5E
		4.1	UN1517	I	4.1	23, N41	None	211	None	1 kg	15 kg	D	28, 36
		4.2	UN2008	I II	4.2 4.2	T21, TP7, TP33 A19, A20, IB6, IP2, N5, N34, T3, TP33	None None	211 212	242 241	Forbidden 15 kg	Forbidden 50 kg	D D	
		4.1	UN1358	III II	4.2 4.1	IB8, IP3, T1, TP33 A19, A20, IB6, IP2, N34, T3, TP33	None None	213 212	241 241	25 kg 15 kg	100 kg 50 kg	D E	74
		4.2 3	UN1932 UN1308	III II III	4.2 3 3	IB8, IP3, N34, T1, TP33 IB2 B1, IB2	None None 150	213 201 202 203	240 243 242 242	Forbidden Forbidden 5 L 60 L	Forbidden Forbidden 60 L 220 L	D B B B	

Zirconium tetrachloride	8	UN2503	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A
-------------------------------	---	--------	-----	---	-------	--------------------	-----	-------	-----	-------	-----	-------	-------	--------	---	-------

APPENDIX A TO § 172.101—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

1. This appendix lists materials and their corresponding reportable quantities (RQ's) that are listed or designated as "hazardous substances" under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601(14) (CERCLA; 42 U.S.C. 9601 *et seq.*). This listing fulfills the requirement of CERCLA, 42 U.S.C. 9656(a), that all "hazardous substances," as defined in 42 U.S.C. 9601(14), be listed and regulated as hazardous materials under 49 U.S.C. 5101-5127. That definition includes substances listed under sections 311(b)(2)(A) and 307(a) of the Federal Water Pollution Control Act, 33 U.S.C. 1321(b)(2)(A) and 1317(a), section 3001 of the Solid Waste Disposal Act, 42 U.S.C. 6921, and section 112 of the Clean Air Act, 42 U.S.C. 7412. In addition, this list contains materials that the Administrator of the Environmental Protection Agency has determined to be hazardous substances in accordance with section 102 of CERCLA, 42 U.S.C. 9602. It should be noted that 42 U.S.C. 9656(b) provides that common and contract carriers may be held liable under laws other than CERCLA for the release of a hazardous substance as defined in that Act, during transportation that commenced before the effective date of the listing and regulating of that substance as a hazardous material under 49 U.S.C. 5101-5127.

2. This appendix is divided into two TABLES which are entitled "TABLE 1—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES" and "TABLE 2—RADIONUCLIDES." A material listed in this appendix is regulated as a hazardous material and a hazardous substance under this subchapter if it meets the definition of a hazardous substance in § 171.8 of this subchapter.

3. The procedure for selecting a proper shipping name for a hazardous substance is set forth in § 172.101(c).

4. Column 1 of TABLE 1, entitled "Hazardous substance", contains the names of those elements and compounds that are hazardous substances. Following the listing of elements and compounds is a listing of waste streams. These waste streams appear on the list in numerical sequence and are referenced by the appropriate "D", "F", or "K" numbers. Column 2 of TABLE 1, entitled "Reportable quantity (RQ)", contains the report-

able quantity (RQ), in pounds and kilograms, for each hazardous substance listed in Column 1 of TABLE 1.

5. A series of notes is used throughout TABLE 1 and TABLE 2 to provide additional information concerning certain hazardous substances. These notes are explained at the end of each TABLE.

6. TABLE 2 lists radionuclides that are hazardous substances and their corresponding RQ's. The RQ's in table 2 for radionuclides are expressed in units of curies and terabecquerels, whereas those in table 1 are expressed in units of pounds and kilograms. If a material is listed in both table 1 and table 2, the lower RQ shall apply. Radionuclides are listed in alphabetical order. The RQ's for radionuclides are given in the radiological unit of measure of curie, abbreviated "Ci", followed, in parentheses, by an equivalent unit measured in terabecquerels, abbreviated "TBq".

7. For mixtures of radionuclides, the following requirements shall be used in determining if a package contains an RQ of a hazardous substance: (i) if the identity and quantity (in curies or terabecquerels) of each radionuclide in a mixture or solution is known, the ratio between the quantity per package (in curies or terabecquerels) and the RQ for the radionuclide must be determined for each radionuclide. A package contains an RQ of a hazardous substance when the sum of the ratios for the radionuclides in the mixture or solution is equal to or greater than one; (ii) if the identity of each radionuclide in a mixture or solution is known but the quantity per package (in curies or terabecquerels) of one or more of the radionuclides is unknown, an RQ of a hazardous substance is present in a package when the total quantity (in curies or terabecquerels) of the mixture or solution is equal to or greater than the lowest RQ of any individual radionuclide in the mixture or solution; and (iii) if the identity of one or more radionuclides in a mixture or solution is unknown (or if the identity of a radionuclide by itself is unknown), an RQ of a hazardous substance is present when the total quantity (in curies or terabecquerels) in a package is equal to or greater than either one curie or the lowest RQ of any known individual radionuclide in the mixture or solution, whichever is lower.

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
A2213	5000 (2270)
Acenaphthene	100 (45.4)
Acenaphthylene	5000 (2270)
Acetaldehyde	1000 (454)
Acetaldehyde, chloro	1000 (454)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Acetaldehyde, trichloro-	5000 (2270)
Acetamide	100 (45.4)
Acetamide, N-(aminothioxomethyl)-	1000 (454)
Acetamide, N-(4-ethoxyphenyl)-	100 (45.4)
Acetamide, N-9H-fluoren-2-yl-	1 (0.454)
Acetamide, 2-fluoro-	100 (45.4)
Acetic acid	5000 (2270)
Acetic acid, (2,4-dichlorophenoxy)-, salts & esters	100 (45.4)
Acetic acid, ethyl ester	5000 (2270)
Acetic acid, fluoro-, sodium salt	10 (4.54)
Acetic acid, lead(2+) salt	10 (4.54)
Acetic acid, thallium(1+) salt	100 (45.4)
Acetic acid, (2,4,5-trichlorophenoxy)-	1000 (454)
Acetic anhydride	5000 (2270)
Acetone	5000 (2270)
Acetone cyanohydrin	10 (4.54)
Acetonitrile	5000 (2270)
Acetophenone	5000 (2270)
2-Acetylaminofluorene	1 (0.454)
Acetyl bromide	5000 (2270)
Acetyl chloride	5000 (2270)
1-Acetyl-2-thiourea	1000 (454)
Acrolein	1 (0.454)
Acrylamide	5000 (2270)
Acrylic acid	5000 (2270)
Acrylonitrile	100 (45.4)
Adipic acid	5000 (2270)
Aldicarb	1 (0.454)
Aldicarb sulfone	100 (45.4)
Aldrin	1 (0.454)
Allyl alcohol	100 (45.4)
Allyl chloride	1000 (454)
Aluminum phosphide	100 (45.4)
Aluminum sulfate	5000 (2270)
4-Aminobiphenyl	1 (0.454)
5-(Aminomethyl)-3-isoxazolol	1000 (454)
4-Aminopyridine	1000 (454)
Amitrole	10 (4.54)
Ammonia	100 (45.4)
Ammonium acetate	5000 (2270)
Ammonium benzoate	5000 (2270)
Ammonium bicarbonate	5000 (2270)
Ammonium bichromate	10 (4.54)
Ammonium bifluoride	100 (45.4)
Ammonium bisulfite	5000 (2270)
Ammonium carbamate	5000 (2270)
Ammonium carbonate	5000 (2270)
Ammonium chloride	5000 (2270)
Ammonium chromate	10 (4.54)
Ammonium citrate, dibasic	5000 (2270)
Ammonium dichromate ^{SR}	10 (4.54)
Ammonium fluoborate	5000 (2270)
Ammonium fluoride	100 (45.4)
Ammonium hydroxide	1000 (454)
Ammonium oxalate	5000 (2270)
Ammonium picrate	10 (4.54)
Ammonium silicofluoride	1000 (454)
Ammonium sulfamate	5000 (2270)
Ammonium sulfide	100 (45.4)
Ammonium sulfite	5000 (2270)
Ammonium tartrate	5000 (2270)
Ammonium thiocyanate	5000 (2270)
Ammonium vanadate	1000 (454)
Amyl acetate	5000 (2270)
iso-Amyl acetate.	
sec-Amyl acetate.	
tert-Amyl acetate.	
Aniline	5000 (2270)
o-Anisidine	100 (45.4)
Anthracene	5000 (2270)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Antimony ϕ	5000 (2270)
Antimony pentachloride	1000 (454)
Antimony potassium tartrate	100 (45.4)
Antimony tribromide	1000 (454)
Antimony trichloride	1000 (454)
Antimony trifluoride	1000 (454)
Antimony trioxide	1000 (454)
Argentate(1-), bis(cyano-C)-, potassium	1 (0.454)
Aroclor 1016	1 (0.454)
Aroclor 1221	1 (0.454)
Aroclor 1232	1 (0.454)
Aroclor 1242	1 (0.454)
Aroclor 1248	1 (0.454)
Aroclor 1254	1 (0.454)
Aroclor 1260	1 (0.454)
Aroclors	1 (0.454)
Arsenic ϕ	1 (0.454)
Arsenic acid H_3AsO_4	1 (0.454)
Arsenic disulfide	1 (0.454)
Arsenic oxide As_2O_3	1 (0.454)
Arsenic oxide As_2O_5	1 (0.454)
Arsenic pentoxide	1 (0.454)
Arsenic trichloride	1 (0.454)
Arsenic trioxide	1 (0.454)
Arsenic trisulfide	1 (0.454)
Arsine, diethyl-	1 (0.454)
Arsinic acid, dimethyl-	1 (0.454)
Arsonous dichloride, phenyl-	1 (0.454)
Asbestos $\phi\phi$	1 (0.454)
Auramine	100 (45.4)
Azaserine	1 (0.454)
Aziridine	1 (0.454)
Aziridine, 2-methyl-	1 (0.454)
Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[aminocarbonyloxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1 α alpha,8beta,8 α alpha, 8balpha)]-	10 (4.54)
Barban	10 (4.54)
Barium cyanide	10 (4.54)
Bendiocarb	100 (45.4)
Bendiocarb phenol	1000 (454)
Benomyl	10 (4.54)
Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	10 (4.54)
Benz[c]acridine	100 (45.4)
Benzal chloride	5000 (2270)
Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	5000 (2270)
Benz[a]anthracene	10 (4.54)
1,2-Benzanthracene	10 (4.54)
Benz[a]anthracene, 7,12-dimethyl-	1 (0.454)
Benzenamine	5000 (2270)
Benzenamine, 4,4'-carbonimidoylbis (N,N dimethyl)-	100 (45.4)
Benzenamine, 4-chloro-	1000 (454)
Benzenamine, 4-chloro-2-methyl-, hydrochloride	100 (45.4)
Benzenamine, N,N-dimethyl-4-(phenylazo)-	10 (4.54)
Benzenamine, 2-methyl-	100 (45.4)
Benzenamine, 4-methyl-	100 (45.4)
Benzenamine, 4,4'-methylenebis[2-chloro-	10 (4.54)
Benzenamine, 2-methyl-, hydrochloride	100 (45.4)
Benzenamine, 2-methyl-5-nitro-	100 (45.4)
Benzenamine, 4-nitro-	5000 (2270)
Benzene	10 (4.54)
Benzenoacetic acid, 4-chloro- α -(4-chlorophenyl)- α -hydroxy-, ethyl ester	10 (4.54)
Benzene, 1-bromo-4-phenoxy-	100 (45.4)
Benzenobutanoic acid, 4-[bis(2-chloroethyl)amino]-	10 (4.54)
Benzene, chloro-	100 (45.4)
Benzene, (chloromethyl)-	100 (45.4)
Benzenediamine, ar-methyl-	10 (4.54)
1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	100 (45.4)
1,2-Benzenedicarboxylic acid, dibutyl ester	10 (4.54)
1,2-Benzenedicarboxylic acid, diethyl ester	1000 (454)
1,2-Benzenedicarboxylic acid, dimethyl ester	5000 (2270)
1,2-Benzenedicarboxylic acid, dioctyl ester	5000 (2270)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Benzene, 1,2-dichloro-	100 (45.4)
Benzene, 1,3-dichloro-	100 (45.4)
Benzene, 1,4-dichloro-	100 (45.4)
Benzene, 1,1'-(2,2-dichloroethylidene) bis[4-chloro-	1 (0.454)
Benzene, (dichloromethyl)-	5000 (2270)
Benzene, 1,3-diisocyanatomethyl-	100 (45.4)
Benzene, dimethyl-	100 (45.4)
1,3-Benzenediol	5000 (2270)
1,2-Benzenediol,4-[1-hydroxy-2-(methylamino) ethyl]-	1000 (454)
Benzeneethanamine, alpha,alpha-dimethyl-	5000 (2270)
Benzene, hexachloro-	10 (4.54)
Benzene, hexahydro-	1000 (454)
Benzene, methyl-	1000 (454)
Benzene, 1-methyl-2,4-dinitro-	10 (4.54)
Benzene, 2-methyl-1,3-dinitro-	100 (45.4)
Benzene, (1-methylethyl)-	5000 (2270)
Benzene, nitro-	1000 (454)
Benzene, pentachloro-	10 (4.54)
Benzene, pentachloronitro-	100 (45.4)
Benzenesulfonic acid chloride	100 (45.4)
Benzenesulfonyl chloride	100 (45.4)
Benzene,1,2,4,5-tetrachloro-	5000 (2270)
Benzenethiol	100 (45.4)
Benzene,1,1'-(2,2,2-trichloroethylidene) bis[4-chloro-	1 (0.454)
Benzene,1,1'-(2,2,2-trichloroethylidene) bis[4-methoxy-	1 (0.454)
Benzene, (trichloromethyl)-	10 (4.54)
Benzene, 1,3,5-trinitro-	10 (4.54)
Benidine	1 (0.454)
1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts	100 (45.4)
Benzo[a]anthracene	10 (4.54)
1,3-Benzodioxole, 5-(1-propenyl)-1	100 (45.4)
1,3-Benzodioxole, 5-(2-propenyl)-	100 (45.4)
1,3-Benzodioxole, 5-propyl-	10 (4.54)
1,3-Benzodioxol-4-ol, 2,2-dimethyl-	1000 (454)
1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate	100 (45.4)
Benzo[b]fluoranthene	1 (0.454)
Benzo[k]fluoranthene	5000 (2270)
7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-	10 (4.54)
7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate	10 (4.54)
Benzoic acid	5000 (2270)
Benzoic acid, 2-hydroxy-, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo [2,3-b]indol-5-yl methylcarbamate ester (1:1)	100 (45.4)
Benzonitrile	5000 (2270)
Benzo[rs]pentaphene	10 (4.54)
Benzo[ghi]perylene	5000 (2270)
2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts	100 (45.4)
Benzo[a]pyrene	1 (0.454)
3,4-Benzopyrene	1 (0.454)
p-Benzoquinone	10 (4.54)
Benzotrichloride	10 (4.54)
Benzoyl chloride	1000 (454)
Benzyl chloride	100 (45.4)
Beryllium g	10 (4.54)
Beryllium chloride	1 (0.454)
Beryllium fluoride	1 (0.454)
Beryllium nitrate	1 (0.454)
Beryllium powder g	10 (4.54)
alpha-BHC	10 (4.54)
beta-BHC	1 (0.454)
delta-BHC	1 (0.454)
gamma-BHC	1 (0.454)
2,2'-Bioxirane	10 (4.54)
Biphenyl	100 (45.4)
[1,1'-Biphenyl]-4,4'-diamine	1 (0.454)
[1,1'-Biphenyl]-4,4'-diamine,3,3'-dichloro-	1 (0.454)
[1,1'-Biphenyl]-4,4'-diamine,3,3'-dimethoxy-	100 (45.4)
[1,1'-Biphenyl]-4,4'-diamine,3,3'-dimethyl-	10 (4.54)
Bis(2-chloroethoxy) methane	1000 (454)
Bis(2-chloroethyl) ether	10 (4.54)
Bis(chloromethyl) ether	10 (4.54)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Bis(2-ethylhexyl) phthalate	100 (45.4)
Bromoacetone	1000 (454)
Bromoform	100 (45.4)
Bromomethane	1000 (454)
4-Bromophenyl phenyl ether	100 (45.4)
Brucine	100 (45.4)
1,3-Butadiene	10 (4.54)
1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	1 (0.454)
1-Butanamine, N-butyl-N-nitroso-	10 (4.54)
1-Butanol	5000 (2270)
2-Butanone	5000 (2270)
2-Butanone, 3,3-dimethyl-1(methylthio)-, O [(methylamino) carbonyl] oxime	100 (45.4)
2-Butanone peroxide	10 (4.54)
2-Butenal	100 (45.4)
2-Butene, 1,4-dichloro-	1 (0.454)
2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy] methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z), 7(2S*,3R*),7aalpha]]-	10 (4.54)
Butyl acetate	5000 (2270)
iso-Butyl acetate.	
sec-Butyl acetate.	
tert-Butyl acetate.	
n-Butyl alcohol	5000 (2270)
Butylamine	1000 (454)
iso-Butylamine.	
sec-Butylamine.	
tert-Butylamine.	
Butyl benzyl phthalate	100 (45.4)
n-Butyl phthalate	10 (4.54)
Butyric acid	5000 (2270)
iso-Butyric acid.	
Cacodylic acid	1 (0.454)
Cadmium ϵ	10 (4.54)
Cadmium acetate	10 (4.54)
Cadmium bromide	10 (4.54)
Cadmium chloride	10 (4.54)
Calcium arsenate	1 (0.454)
Calcium arsenite	1 (0.454)
Calcium carbide	10 (4.54)
Calcium chromate	10 (4.54)
Calcium cyanamide	1000 (454)
Calcium cyanide Ca(CN) ₂	10 (4.54)
Calcium dodecylbenzenesulfonate	1000 (454)
Calcium hypochlorite	10 (4.54)
Captan	10 (4.54)
Carbamic acid, 1H-benzimidazol-2-yl, methyl ester	10 (4.54)
Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl]-, methyl ester	10 (4.54)
Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butyryl ester	10 (4.54)
Carbamic acid, [(dibutylamino)-thio]methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuran-yl ester	1000 (454)
Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester	1 (0.454)
Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester	100 (45.4)
Carbamic acid, ethyl ester	100 (45.4)
Carbamic acid, methyl-, 3-methylphenyl ester	1000 (454)
Carbamic acid, methylnitroso-, ethyl ester	1 (0.454)
Carbamic acid, [1,2-phenylenebis(iminocarbonothioyl)] bis-, dimethyl ester	10 (4.54)
Carbamic acid, phenyl-, 1-methylethyl ester	1000 (454)
Carbamic chloride, dimethyl-	1 (0.454)
Carbamodithioic acid, 1,2-ethanediyldi-, salts & esters	5000 (2270)
Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester	100 (45.4)
Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester	100 (45.4)
Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester	5000 (2270)
Carbaryl	100 (45.4)
Carbendazim	10 (4.54)
Carbofuran	10 (4.54)
Carbofuran phenol	10 (4.54)
Carbon disulfide	100 (45.4)
Carbonic acid, dithallium(1+) salt	100 (45.4)
Carbonic dichloride	10 (4.54)
Carbonic difluoride	1000 (454)
Carbonochloridic acid, methyl ester	1000 (454)
Carbon oxyfluoride	1000 (454)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Carbon tetrachloride	10 (4.54)
Carbonyl sulfide	100 (45.4)
Carbosulfan	1000 (454)
Catechol	100 (45.4)
Chloral	5000 (2270)
Chloramben	100 (45.4)
Chlorambucil	10 (4.54)
Chlordane	1 (0.454)
Chlordane, alpha & gamma isomers	1 (0.454)
CHLORDANE (TECHNICAL MIXTURE AND METABOLITES)	1 (0.454)
Chlorinated camphene	1 (0.454)
Chlorine	10 (4.54)
Chloromaphazine	100 (45.4)
Chloroacetaldehyde	1000 (454)
Chloroacetic acid	100 (45.4)
2-Chloroacetophenone	100 (45.4)
p-Chloroaniline	1000 (454)
Chlorobenzene	100 (45.4)
Chlorobenzilate	10 (4.54)
p-Chloro-m-cresol	5000 (2270)
Chlorodibromomethane	100 (45.4)
1-Chloro-2,3-epoxypropane	100 (45.4)
Chloroethane	100 (45.4)
2-Chloroethyl vinyl ether	1000 (454)
Chloroform	10 (4.54)
Chloromethane	100 (45.4)
Chloromethyl methyl ether	10 (4.54)
beta-Chloronaphthalene	5000 (2270)
2-Chloronaphthalene	5000 (2270)
2-Chlorophenol	100 (45.4)
o-Chlorophenol	100 (45.4)
4-Chlorophenyl phenyl ether	5000 (2270)
1-(o-Chlorophenyl)thiourea	100 (45.4)
Chloroprene	100 (45.4)
3-Chloropropionitrile	1000 (454)
Chlorosulfonic acid	1000 (454)
4-Chloro-o-toluidine, hydrochloride	100 (45.4)
Chlorpyrifos	1 (0.454)
Chromic acetate	1000 (454)
Chromic acid	10 (4.54)
Chromic acid H ₂ CrO ₄ , calcium salt	10 (4.54)
Chromic sulfate	1000 (454)
Chromium ϵ	5000 (2270)
Chromous chloride	1000 (454)
Chrysene	100 (45.4)
Cobaltous bromide	1000 (454)
Cobaltous formate	1000 (454)
Cobaltous sulfamate	1000 (454)
Coke Oven Emissions	1 (0.454)
Copper ϵ	5000 (2270)
Copper chloride \oplus	10 (4.54)
Copper cyanide Cu(CN)	10 (4.54)
Coumaphos	10 (4.54)
Creosote	1 (0.454)
Cresol (cresylic acid)	100 (45.4)
m-Cresol	100 (45.4)
o-Cresol	100 (45.4)
p-Cresol	100 (45.4)
Cresols (isomers and mixture)	100 (45.4)
Cresylic acid (isomers and mixture)	100 (45.4)
Crotonaldehyde	100 (45.4)
Cumene	5000 (2270)
m-Cumenyl methylcarbamate	10 (4.54)
Cupric acetate	100 (45.4)
Cupric acetoarsenite	1 (0.454)
Cupric chloride	10 (4.54)
Cupric nitrate	100 (45.4)
Cupric oxalate	100 (45.4)
Cupric sulfate	10 (4.54)
Cupric sulfate, ammoniated	100 (45.4)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Cupric tartrate	100 (45.4)
Cyanides (soluble salts and complexes) not otherwise specified	10 (4.54)
Cyanogen	100 (45.4)
Cyanogen bromide (CN)Br	1000 (454)
Cyanogen chloride (CN)Cl	10 (4.54)
2,5-Cyclohexadiene-1,4-dione	10 (4.54)
Cyclohexane	1000 (454)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1 α , 2 α , 3 β -, 4 α , 5 α , 6 β)	1 (0.454)
Cyclohexanone	5000 (2270)
2-Cyclohexyl-4,6-dinitrophenol	100 (45.4)
1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	10 (4.54)
Cyclophosphamide	10 (4.54)
2,4-D Acid	100 (45.4)
2,4-D Ester	100 (45.4)
2,4-D, salts and esters	100 (45.4)
Daunomycin	10 (4.54)
DDD	1 (0.454)
4,4'-DDD	1 (0.454)
DDE (72-55-9) [#]	1 (0.454)
DDE (3547-04-4) [#]	5000 (2270)
4,4'-DDE	1 (0.454)
DDT	1 (0.454)
4,4'-DDT	1 (0.454)
DEHP	100 (45.4)
Diallate	100 (45.4)
Diazinon	1 (0.454)
Diazomethane	100 (45.4)
Dibenz[a,h]anthracene	1 (0.454)
1,2:5,6-Dibenzanthracene	1 (0.454)
Dibenzo[a,h]anthracene	1 (0.454)
Dibenzofuran	100 (45.4)
Dibenzo[a,i]pyrene	10 (4.54)
1,2-Dibromo-3-chloropropane	1 (0.454)
Dibromoethane	1 (0.454)
Dibutyl phthalate	10 (4.54)
Di-n-butyl phthalate	10 (4.54)
Dicamba	1000 (454)
Dichlobenil	100 (45.4)
Dichlone	1 (0.454)
Dichlorobenzene	100 (45.4)
1,2-Dichlorobenzene	100 (45.4)
1,3-Dichlorobenzene	100 (45.4)
1,4-Dichlorobenzene	100 (45.4)
m-Dichlorobenzene	100 (45.4)
o-Dichlorobenzene	100 (45.4)
p-Dichlorobenzene	100 (45.4)
3,3'-Dichlorobenzidine	1 (0.454)
Dichlorobromomethane	5000 (2270)
1,4-Dichloro-2-butene	1 (0.454)
Dichlorodifluoromethane	5000 (2270)
1,1-Dichloroethane	1000 (454)
1,2-Dichloroethane	100 (45.4)
1,1-Dichloroethylene	100 (45.4)
1,2-Dichloroethylene	1000 (454)
Dichloroethyl ether	10 (4.54)
Dichloroisopropyl ether	1000 (454)
Dichloromethane	1000 (454)
Dichloromethoxyethane	1000 (454)
Dichloromethyl ether	10 (4.54)
2,4-Dichlorophenol	100 (45.4)
2,6-Dichlorophenol	100 (45.4)
Dichlorophenylarsine	1 (0.454)
Dichloropropane	1000 (454)
1,1-Dichloropropane	
1,3-Dichloropropane	
1,2-Dichloropropane	1000 (454)
Dichloropropane-Dichloropropene (mixture)	100 (45.4)
Dichloropropene	100 (45.4)
2,3-Dichloropropene	
1,3-Dichloropropene	100 (45.4)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
2,2-Dichloropropionic acid	5000 (2270)
Dichlorvos	10 (4.54)
Dicofol	10 (4.54)
Dieldrin	1 (0.454)
1,2,3,4-Diepoxybutane	10 (4.54)
Diethanolamine	100 (45.4)
Diethylamine	100 (45.4)
N,N-Diethylaniline	1000 (454)
Diethylarsine	1 (0.454)
Diethylene glycol, dicarbamate	5000 (2270)
1,4-Diethyleneoxide	100 (45.4)
Diethylhexyl phthalate	100 (45.4)
N,N'-Diethylhydrazine	10 (4.54)
O,O-Diethyl S-methyl dithiophosphate	5000 (2270)
Diethyl-p-nitrophenyl phosphate	100 (45.4)
Diethyl phthalate	1000 (454)
O,O-Diethyl O-pyrazinyl phosphorothioate	100 (45.4)
Diethylstilbestrol	1 (0.454)
Diethyl sulfate	10 (4.54)
Dihydrosafrole	10 (4.54)
Diisopropylfluorophosphate (DFP)	100 (45.4)
1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha, 4alpha, 4beta, 5alpha, 8alpha, 8beta)-	1 (0.454)
1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha, 4alpha, 4beta, 5beta, 8beta, 8beta)-1 (0.454).	
2,7:3,6-Dimethanonaphth[2,3-b]oxirene,3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1alpha, 2beta, 2alpha, 3beta, 6beta, 6alpha, 7beta, 7alpha)-	1 (0.454)
2,7:3,6-Dimethanonaphth[2, 3-b]oxirene,3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1alpha, 2beta, 2alpha, 3alpha, 6alpha, 6beta, 7beta, 7alpha)-, & metabolites	
Dimethoate	1 (0.454)
3,3'-Dimethoxybenzidine	10 (4.54)
Dimethylamine	100 (45.4)
Dimethyl aminoazobenzene	1000 (454)
p-Dimethylaminoazobenzene	10 (4.54)
N,N-Dimethylaniline	10 (4.54)
7,12-Dimethylbenz[a]anthracene	10 (4.54)
3,3'-Dimethylbenzidine	1 (0.454)
alpha,alpha-Dimethylbenzylhydroperoxide	10 (4.54)
Dimethylcarbamoyl chloride	1 (0.454)
Dimethylformamide	100 (45.4)
1,1-Dimethylhydrazine	10 (4.54)
1,2-Dimethylhydrazine	1 (0.454)
Dimethylhydrazine, unsymmetrical ⁶⁶	10 (4.54)
alpha,alpha-Dimethylphenethylamine	5000 (2270)
2,4-Dimethylphenol	100 (45.4)
Dimethyl phthalate	5000 (2270)
Dimethyl sulfate	100 (45.4)
Dimetilan	1 (0.454)
Dinitrobenzene (mixed)	100 (45.4)
m-Dinitrobenzene.	
o-Dinitrobenzene.	
p-Dinitrobenzene.	
4,6-Dinitro-o-cresol, and salts	10 (4.54)
Dinitrogen tetroxide ⁶⁶	10 (4.54)
Dinitrophenol	10 (4.54)
2,5-Dinitrophenol.	
2,6-Dinitrophenol.	
2,4-Dinitrophenol	10 (4.54)
Dinitrotoluene	10 (4.54)
3,4-Dinitrotoluene.	
2,4-Dinitrotoluene	10 (4.54)
2,6-Dinitrotoluene	100 (45.4)
Dinoseb	1000 (454)
Di-n-octyl phthalate	5000 (2270)
1,4-Dioxane	100 (45.4)
1,2-Diphenylhydrazine	10 (4.54)
Diphosphoramidate, octamethyl-	100 (45.4)
Diphosphoric acid, tetraethyl ester	10 (4.54)
Dipropylamine	5000 (2270)
Di-n-propylnitrosamine	10 (4.54)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Diquat	1000 (454)
Disulfoton	1 (0.454)
Dithiobiuret	100 (45.4)
1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O-[(methylamino)-carbonyl]oxime	100 (45.4)
Diuron	100 (45.4)
Dodecylbenzenesulfonic acid	1000 (454)
Endosulfan	1 (0.454)
alpha-Endosulfan	1 (0.454)
beta-Endosulfan	1 (0.454)
Endosulfan sulfate	1 (0.454)
Endothall	1000 (454)
Endrin	1 (0.454)
Endrin aldehyde	1 (0.454)
Endrin, & metabolites	1 (0.454)
Epichlorohydrin	100 (45.4)
Epinephrine	1000 (454)
1,2-Epoxybutane	100 (45.4)
Ethanal	1000 (454)
Ethanamine, N,N-diethyl-	5000 (2270)
Ethanamine, N-ethyl-N-nitroso-	1 (0.454)
1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	5000 (2270)
Ethane, 1,2-dibromo-	1 (0.454)
Ethane, 1,1-dichloro-	1000 (454)
Ethane, 1,2-dichloro-	100 (45.4)
Ethanedinitrile	100 (45.4)
Ethane, hexachloro-	100 (45.4)
Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-	1000 (454)
Ethane, 1,1'-oxybis-	100 (45.4)
Ethane, 1,1'-oxybis[2-chloro-	10 (4.54)
Ethane, pentachloro-	10 (4.54)
Ethane, 1,1,1,2-tetrachloro-	100 (45.4)
Ethane, 1,1,2,2-tetrachloro-	100 (45.4)
Ethanethioamide	10 (4.54)
Ethane, 1,1,1-trichloro-	1000 (454)
Ethane, 1,1,2-trichloro-	100 (45.4)
Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester	5000 (2270)
Ethanimidothioic acid, 2-(dimethylamino)-N-[[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester	100 (45.4)
Ethanimidothioic acid, N-[[[(methylamino) carbonyl]oxy]-, methyl ester	100 (45.4)
Ethanimidothioic acid, N,N'[[thiobis[(methylimino)carbonyloxy]] bis-, dimethyl ester	100 (45.4)
Ethanol, 2-ethoxy-	1000 (454)
Ethanol, 2,2'-(nitrosoimino)bis-	1 (0.454)
Ethanol, 2,2'-oxybis-, dicarbamate	5000 (2270)
Ethanone, 1-phenyl-	5000 (2270)
Ethene, chloro-	1 (0.454)
Ethene, (2-chloroethoxy)-	1000 (454)
Ethene, 1,1-dichloro-	100 (45.4)
Ethene, 1,2-dichloro-(E)	1000 (454)
Ethene, tetrachloro-	100 (45.4)
Ethene, trichloro-	100 (45.4)
Ethion	10 (4.54)
Ethyl acetate	5000 (2270)
Ethyl acrylate	1000 (454)
Ethylbenzene	1000 (454)
Ethyl carbamate	100 (45.4)
Ethyl chloride	100 (45.4)
Ethyl cyanide	10 (4.54)
Ethylenebisdithiocarbamic acid, salts & esters	5000 (2270)
Ethylenediamine	5000 (2270)
Ethylenediamine-tetraacetic acid (EDTA)	5000 (2270)
Ethylene dibromide	1 (0.454)
Ethylene dichloride	100 (45.4)
Ethylene glycol	5000 (2270)
Ethylene glycol monoethyl ether	1000 (454)
Ethylene oxide	10 (4.54)
Ethylenethiourea	10 (4.54)
Ethylenimine	1 (0.454)
Ethyl ether	100 (45.4)
Ethylidene dichloride	1000 (454)
Ethyl methacrylate	1000 (454)
Ethyl methanesulfonate	1 (0.454)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Ethyl methyl ketone ⁶⁰	5000 (2270)
Famphur	1000 (454)
Ferric ammonium citrate	1000 (454)
Ferric ammonium oxalate	1000 (454)
Ferric chloride	1000 (454)
Ferric fluoride	100 (45.4)
Ferric nitrate	1000 (454)
Ferric sulfate	1000 (454)
Ferrous ammonium sulfate	1000 (454)
Ferrous chloride	100 (45.4)
Ferrous sulfate	1000 (454)
Fluoranthene	100 (45.4)
Fluorene	5000 (2270)
Fluorine	10 (4.54)
Fluoroacetamide	100 (45.4)
Fluoroacetic acid, sodium salt	10 (4.54)
Formaldehyde	100 (45.4)
Formetanate hydrochloride	100 (45.4)
Formic acid	5000 (2270)
Formparanate	100 (45.4)
Fulminic acid, mercury(2+)salt	10 (4.54)
Fumaric acid	5000 (2270)
Furan	100 (45.4)
2-Furancarboxyaldehyde	5000 (2270)
2,5-Furandione	5000 (2270)
Furan, tetrahydro-	1000 (454)
Furfural	5000 (2270)
Furfuran	100 (45.4)
Glucopyranose, 2-deoxy-2-(3-methyl-3-nitroso-ureido)-, D-	1 (0.454)
D-Glucose, 2-deoxy-2-[[[(methylnitrosoamino)-carbonyl]amino]-	1 (0.454)
Glycidylaldehyde	10 (4.54)
Guanidine, N-methyl-N'-nitro-N-nitroso-	10 (4.54)
Guthion	1 (0.454)
Heptachlor	1 (0.454)
Heptachlor epoxide	1 (0.454)
Hexachlorobenzene	10 (4.54)
Hexachlorobutadiene	1 (0.454)
Hexachlorocyclopentadiene	10 (4.54)
Hexachloroethane	100 (45.4)
Hexachlorophene	100 (45.4)
Hexachloropropene	1000 (454)
Hexaethyl tetraphosphate	100 (45.4)
Hexamethylene-1,6-diisocyanate	100 (45.4)
Hexamethylphosphoramide	1 (0.454)
Hexane	5000 (2270)
Hexone	5000 (2270)
Hydrazine	1 (0.454)
Hydrazinecarbothioamide	100 (45.4)
Hydrazine, 1,2-diethyl-	10 (4.54)
Hydrazine, 1,1-dimethyl-	10 (4.54)
Hydrazine, 1,2-dimethyl-	1 (0.454)
Hydrazine, 1,2-diphenyl-	10 (4.54)
Hydrazine, methyl-	10 (4.54)
Hydrochloric acid	5000 (2270)
Hydrocyanic acid	10 (4.54)
Hydrofluoric acid	100 (45.4)
Hydrogen chloride	5000 (2270)
Hydrogen cyanide	10 (4.54)
Hydrogen fluoride	100 (45.4)
Hydrogen phosphide	100 (45.4)
Hydrogen sulfide H ₂ S	100 (45.4)
Hydroperoxide, 1-methyl-1-phenylethyl-	10 (4.54)
Hydroquinone	100 (45.4)
2-Imidazolidinethione	10 (4.54)
Indeno(1,2,3-cd)pyrene	100 (45.4)
Iodomethane	100 (45.4)
1,3-Isobenzofurandione	5000 (2270)
Isobutyl alcohol	5000 (2270)
Isodrin	1 (0.454)
Isolan	100 (45.4)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Isophorone	5000 (2270)
Isoprene	100 (45.4)
Isopropanolamine dodecylbenzenesulfonate	1000 (454)
3-Isopropylphenyl N-methylcarbamate	10 (4.54)
Isosafrole	100 (45.4)
3(2H)-Isoxazolone, 5-(aminomethyl)-	1000 (454)
Kepone	1 (0.454)
Lasiocarpine	10 (4.54)
Lead ϵ	10 (4.54)
Lead acetate	10 (4.54)
Lead arsenate	1 (0.454)
Lead, bis(acetato-O)tetrahydroxytri-	10 (4.54)
Lead chloride	10 (4.54)
Lead fluoroborate	10 (4.54)
Lead fluoride	10 (4.54)
Lead iodide	10 (4.54)
Lead nitrate	10 (4.54)
Lead phosphate	10 (4.54)
Lead stearate	10 (4.54)
Lead subacetate	10 (4.54)
Lead sulfate	10 (4.54)
Lead sulfide	10 (4.54)
Lead thiocyanate	10 (4.54)
Lindane	1 (0.454)
Lindane (all isomers)	1 (0.454)
Lithium chromate	10 (4.54)
Malathion	100 (45.4)
Maleic acid	5000 (2270)
Maleic anhydride	5000 (2270)
Maleic hydrazide	5000 (2270)
Malononitrile	1000 (454)
Manganese, bis(dimethylcarbamodithioato-S,S')-	10 (4.54)
Manganese dimethyldithiocarbamate	10 (4.54)
MDI	5000 (2270)
MEK	5000 (2270)
Melphalan	1 (0.454)
Mercaptodimethur	10 (4.54)
Mercuric cyanide	1 (0.454)
Mercuric nitrate	10 (4.54)
Mercuric sulfate	10 (4.54)
Mercuric thiocyanate	10 (4.54)
Mercurous nitrate	10 (4.54)
Mercury	1 (0.454)
Mercury, (acetato-O)phenyl-	100 (45.4)
Mercury fulminate	10 (4.54)
Methacrylonitrile	1000 (454)
Methanamine, N-methyl-	1000 (454)
Methanamine, N-methyl-N-nitroso-	10 (4.54)
Methane, bromo-	1000 (454)
Methane, chloro-	100 (45.4)
Methane, chloromethoxy-	10 (4.54)
Methane, dibromo-	1000 (454)
Methane, dichloro-	1000 (454)
Methane, dichlorodifluoro-	5000 (2270)
Methane, iodo-	100 (45.4)
Methane, isocyanato-	10 (4.54)
Methane, oxybis(chloro-	10 (4.54)
Methanesulfonyl chloride, trichloro-	100 (45.4)
Methanesulfonic acid, ethyl ester	1 (0.454)
Methane, tetrachloro-	10 (4.54)
Methane, tetranitro-	10 (4.54)
Methanethiol	100 (45.4)
Methane, tribromo-	100 (45.4)
Methane, trichloro-	10 (4.54)
Methane, trichlorofluoro-	5000 (2270)
Methanimidamide, N,N-dimethyl-N'-[3-[[[(methylamino) carbonyl] oxy] phenyl]-, monohydrochloride	100 (45.4)
Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[[(methylamino)carbonyl] oxy]phenyl]-	100 (45.4)
6,9-Methano-2,4,3-benzodioxathiepin,6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	1 (0.454)
4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	1 (0.454)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	1 (0.454)
Methanol	5000 (2270)
Methapyrene	5000 (2270)
1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-	1 (0.454)
Methiocarb	10 (4.54)
Methomyl	100 (45.4)
Methoxychlor	1 (0.454)
Methyl alcohol	5000 (2270)
Methylamine @	100 (45.4)
2-Methyl aziridine	1 (0.454)
Methyl bromide	1000 (454)
1-Methylbutadiene	100 (45.4)
Methyl chloride	100 (45.4)
Methyl chlorocarbonate	1000 (454)
Methyl chloroform	1000 (454)
Methyl chloroformate @	1000 (454)
Methyl chloromethyl ether @	10 (4.54)
3-Methylcholanthrene	10 (4.54)
4,4'-Methylenebis(2-chloroaniline)	10 (4.54)
Methylene bromide	1000 (454)
Methylene chloride	1000 (454)
4,4'-Methylenedianiline	10 (4.54)
Methylene diphenyl diisocyanate	5000 (2270)
Methyl ethyl ketone	5000 (2270)
Methyl ethyl ketone peroxide	10 (4.54)
Methyl hydrazine	10 (4.54)
Methyl iodide	100 (45.4)
Methyl isobutyl ketone	5000 (2270)
Methyl isocyanate	10 (4.54)
2-Methylacetonitrile	10 (4.54)
Methyl mercaptan	100 (45.4)
Methyl methacrylate	1000 (454)
Methyl parathion	100 (45.4)
4-Methyl-2-pentanone	5000 (2270)
Methyl tert-butyl ether	1000 (454)
Methylthiouracil	10 (4.54)
Metolcarb	1000 (454)
Mevinphos	10 (4.54)
Mexacarbate	1000 (454)
Mitomycin C	10 (4.54)
MNNG	10 (4.54)
Monoethylamine	100 (45.4)
Monomethylamine	100 (45.4)
Naled	10 (4.54)
5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	10 (4.54)
1-Naphthalenamine	100 (45.4)
2-Naphthalenamine	10 (4.54)
Naphthalenamine, N,N'-bis(2-chloroethyl)-	100 (45.4)
Naphthalene	100 (45.4)
Naphthalene, 2-chloro-	5000 (2270)
1,4-Naphthalenedione	5000 (2270)
2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt	10 (4.54)
1-Naphthalenol, methylcarbamate	100 (45.4)
Naphthoic acid	100 (45.4)
1,4-Naphthoquinone	5000 (2270)
alpha-Naphthylamine	100 (45.4)
beta-Naphthylamine	10 (4.54)
alpha-Naphthylthiourea	100 (45.4)
Nickel ♂	100 (45.4)
Nickel ammonium sulfate	100 (45.4)
Nickel carbonyl Ni(CO)4, (T-4)	10 (4.54)
Nickel chloride	100 (45.4)
Nickel cyanide Ni(CN)2	10 (4.54)
Nickel hydroxide	10 (4.54)
Nickel nitrate	100 (45.4)
Nickel sulfate	100 (45.4)
Nicotine, & salts	100 (45.4)
Nitric acid	1000 (454)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Nitric acid, thallium (1+) salt	100 (45.4)
Nitric oxide	10 (4.54)
p-Nitroaniline	5000 (2270)
Nitrobenzene	1000 (454)
4-Nitrobiphenyl	10 (4.54)
Nitrogen dioxide	10 (4.54)
Nitrogen oxide NO	10 (4.54)
Nitrogen oxide NO ₂	10 (4.54)
Nitroglycerine	10 (4.54)
Nitrophenol (mixed)	100 (45.4)
m-Nitrophenol.	
o-Nitrophenol	100 (45.4)
p-Nitrophenol	100 (45.4)
2-Nitrophenol	100 (45.4)
4-Nitrophenol	100 (45.4)
2-Nitropropane	10 (4.54)
N-Nitrosodi-n-butylamine	10 (4.54)
N-Nitrosodiethanolamine	1 (0.454)
N-Nitrosodiethylamine	1 (0.454)
N-Nitrosodimethylamine	10 (4.54)
N-Nitrosodiphenylamine	100 (45.4)
N-Nitroso-N-ethylurea	1 (0.454)
N-Nitroso-N-methylurea	1 (0.454)
N-Nitroso-N-methylurethane	1 (0.454)
N-Nitrosomethylvinylamine	10 (4.54)
N-Nitrosomorpholine	1 (0.454)
N-Nitrosopiperidine	10 (4.54)
N-Nitrosopyrrolidine	1 (0.454)
Nitrotoluene	1000 (454)
m-Nitrotoluene.	
o-Nitrotoluene.	
p-Nitrotoluene.	
5-Nitro-o-toluidine	100 (45.4)
Octamethylpyrophosphoramide	100 (45.4)
Osmium oxide OsO ₄ , (T-4)	1000 (454)
Osmium tetroxide	1000 (454)
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	1000 (454)
Oxamyl	100 (45.4)
1,2-Oxathiolane, 2,2-dioxide	10 (4.54)
2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl) tetrahydro-, 2-oxide	10 (4.54)
Oxirane	10 (4.54)
Oxiranecarboxaldehyde	10 (4.54)
Oxirane, (chloromethyl)-	100 (45.4)
Paraformaldehyde	1000 (454)
Paraldehyde	1000 (454)
Parathion	10 (4.54)
PCBs	1 (0.454)
PCNB	100 (45.4)
Pentachlorobenzene	10 (4.54)
Pentachloroethane	10 (4.54)
Pentachloronitrobenzene	100 (45.4)
Pentachlorophenol	10 (4.54)
1,3-Pentadiene	100 (45.4)
Perchloroethylene	100 (45.4)
Perchloromethyl mercaptan ⁶⁸	100 (45.4)
Phenacetin	100 (45.4)
Phenanthrene	5000 (2270)
Phenol	1000 (454)
Phenol, 2-chloro-	100 (45.4)
Phenol, 4-chloro-3-methyl-	5000 (2270)
Phenol, 2-cyclohexyl-4,6-dinitro-	100 (45.4)
Phenol, 2,4-dichloro-	100 (45.4)
Phenol, 2,6-dichloro-	100 (45.4)
Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)	1 (0.454)
Phenol, 2,4-dimethyl-	100 (45.4)
Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester)	1000 (454)
Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate	10 (4.54)
Phenol, 2,4-dinitro-	10 (4.54)
Phenol, methyl-	100 (45.4)
Phenol, 2-methyl-4,6-dinitro-, & salts	10 (4.54)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Phenol, 2,2'-methylenebis[3,4,6-trichloro-]	100 (45.4)
Phenol, 2-(1-methylethoxy)-, methylcarbamate	100 (45.4)
Phenol, 3-(1-methylethyl)-, methyl carbamate	10 (4.54)
Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate	1000 (454)
Phenol, 2-(1-methylpropyl)-4,6-dinitro-	1000 (454)
Phenol, 4-nitro-	100 (45.4)
Phenol, pentachloro-	10 (4.54)
Phenol, 2,3,4,6-tetrachloro-	10 (4.54)
Phenol, 2,4,5-trichloro-	10 (4.54)
Phenol, 2,4,6-trichloro-	10 (4.54)
Phenol, 2,4,6-trinitro-, ammonium salt	10 (4.54)
L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-	1 (0.454)
p-Phenylenediamine	5000 (2270)
Phenyl mercaptan ⁽⁶⁾	100 (45.4)
Phenylmercury acetate	100 (45.4)
Phenylthiourea	100 (45.4)
Phorate	10 (4.54)
Phosgene	10 (4.54)
Phosphine	100 (45.4)
Phosphoric acid	5000 (2270)
Phosphoric acid, diethyl 4-nitrophenyl ester	100 (45.4)
Phosphoric acid, lead(2+) salt (2:3)	10 (4.54)
Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester	1 (0.454)
Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester	10 (4.54)
Phosphorodithioic acid, O,O-diethyl S-methyl ester	5000 (2270)
Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester	10 (4.54)
Phosphorofluoric acid, bis(1-methylethyl) ester	100 (45.4)
Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	10 (4.54)
Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	100 (45.4)
Phosphorothioic acid, O-[4-[(dimethylamino) sulfonyl]phenyl] O,O-dimethyl ester	1000 (454)
Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	100 (45.4)
Phosphorus	1 (0.454)
Phosphorus oxychloride	1000 (454)
Phosphorus pentasulfide	100 (45.4)
Phosphorus sulfide	100 (45.4)
Phosphorus trichloride	1000 (454)
Phthalic anhydride	5000 (2270)
Physostigmine	100 (45.4)
Physostigmine salicylate	100 (45.4)
2-Picoline	5000 (2270)
Piperidine, 1-nitroso-	10 (4.54)
Plumbane, tetraethyl-	10 (4.54)
POLYCHLORINATED BIPHENYLS	1 (0.454)
Potassium arsenate	1 (0.454)
Potassium arsenite	1 (0.454)
Potassium bichromate	10 (4.54)
Potassium chromate	10 (4.54)
Potassium cyanide K(CN)	10 (4.54)
Potassium hydroxide	1000 (454)
Potassium permanganate	100 (45.4)
Potassium silver cyanide	1 (0.454)
Promecarb	1000 (454)
Pronamide	5000 (2270)
Propanal, 2-methyl-2-(methylsulfonyl)-, O-[(methylamino)carbonyl] oxime	100 (45.4)
Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl] oxime	1 (0.454)
1-Propanamine	5000 (2270)
1-Propanamine, N-propyl-	5000 (2270)
1-Propanamine, N-nitroso-N-propyl-	10 (4.54)
Propane, 1,2-dibromo-3-chloro-	1 (0.454)
Propane, 1,2-dichloro-	1000 (454)
Propanedinitrile	1000 (454)
Propanenitrile	10 (4.54)
Propanenitrile, 3-chloro-	1000 (454)
Propanenitrile, 2-hydroxy-2-methyl-	10 (4.54)
Propane, 2-nitro-	10 (4.54)
Propane, 2,2'-oxybis[2-chloro-	1000 (454)
1,3-Propane sultone	10 (4.54)
1,2,3-Propanetriol, trinitrate	10 (4.54)
Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	100 (45.4)
1-Propanol, 2,3-dibromo-, phosphate (3:1)	10 (4.54)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
1-Propanol, 2-methyl-	5000 (2270)
2-Propanone	5000 (2270)
2-Propanone, 1-bromo-	1000 (454)
Propargite	10 (4.54)
Propargyl alcohol	1000 (454)
2-Propenal	1 (0.454)
2-Propenamide	5000 (2270)
1-Propene, 1,3-dichloro-	100 (45.4)
1-Propene, 1,1,2,3,3,3-hexachloro-	1000 (454)
2-Propenenitrile	100 (45.4)
2-Propenenitrile, 2-methyl-	1000 (454)
2-Propenoic acid	5000 (2270)
2-Propenoic acid, ethyl ester	1000 (454)
2-Propenoic acid, 2-methyl-, ethyl ester	1000 (454)
2-Propenoic acid, 2-methyl-, methyl ester	1000 (454)
2-Propen-1-ol	100 (45.4)
Propham	1000 (454)
beta-Propiolactone	10 (4.54)
Propionaldehyde	1000 (454)
Propionic acid	5000 (2270)
Propionic anhydride	5000 (2270)
Propoxur (Baygon)	100 (45.4)
n-Propylamine	5000 (2270)
Propylene dichloride	1000 (454)
Propylene oxide	100 (45.4)
1,2-Propylenimine	1 (0.454)
2-Propyn-1-ol	1000 (454)
Prosulfocarb	5000 (2270)
Pyrene	5000 (2270)
Pyrethrins	1 (0.454)
3,6-Pyridazinedione, 1,2-dihydro-	5000 (2270)
4-Pyridinamine	1000 (454)
Pyridine	1000 (454)
Pyridine, 2-methyl-	5000 (2270)
Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts	100 (45.4)
2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	10 (4.54)
4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thio-	10 (4.54)
Pyrrolidine, 1-nitroso-	1 (0.454)
Pyrrrol[2,3-b] indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-	100 (45.4)
Quinoline	5000 (2270)
Quinone	10 (4.54)
Quintobenzene	100 (45.4)
RADIONUCLIDES	See Table 2
Reserpine	5000 (2270)
Resorcinol	5000 (2270)
Saccharin & salts	100 (45.4)
Safrole	100 (45.4)
Selenious acid	10 (4.54)
Selenious acid, dithallium (1+) salt	1000 (454)
Selenium ϵ	100 (45.4)
Selenium dioxide	10 (4.54)
Selenium oxide	10 (4.54)
Selenium sulfide SeS2	10 (4.54)
Selenourea	1000 (454)
L-Serine, diazoacetate (ester)	1 (0.454)
Silver ϵ	1000 (454)
Silver cyanide Ag(CN)	1 (0.454)
Silver nitrate	1 (0.454)
Silvex (2,4,5-TP)	100 (45.4)
Sodium	10 (4.54)
Sodium arsenate	1 (0.454)
Sodium arsenite	1 (0.454)
Sodium azide	1000 (454)
Sodium bichromate	10 (4.54)
Sodium bifluoride	100 (45.4)
Sodium bisulfite	5000 (2270)
Sodium chromate	10 (4.54)
Sodium cyanide Na(CN)	10 (4.54)
Sodium dodecylbenzenesulfonate	1000 (454)
Sodium fluoride	1000 (454)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Sodium hydrosulfide	5000 (2270)
Sodium hydroxide	1000 (454)
Sodium hypochlorite	100 (45.4)
Sodium methylate	1000 (454)
Sodium nitrite	100 (45.4)
Sodium phosphate, dibasic	5000 (2270)
Sodium phosphate, tribasic	5000 (2270)
Sodium selenite	100 (45.4)
Streptozotocin	1 (0.454)
Strontium chromate	10 (4.54)
Strychnidin-10-one, & salts	10 (4.54)
Strychnidin-10-one, 2,3-dimethoxy-	100 (45.4)
Strychnine, & salts	10 (4.54)
Styrene	1000 (454)
Styrene oxide	100 (45.4)
Sulfur chlorides ⁶⁶	1000 (454)
Sulfuric acid	1000 (454)
Sulfuric acid, dimethyl ester	100 (45.4)
Sulfuric acid, dithallium (1+) salt	100 (45.4)
Sulfur monochloride	1000 (454)
Sulfur phosphide	100 (45.4)
2,4,5-T	1000 (454)
2,4,5-T acid	1000 (454)
2,4,5-T amines	5000 (2270)
2,4,5-T esters	1000 (454)
2,4,5-T salts	1000 (454)
TCDD	1 (0.454)
TDE	1 (0.454)
1,2,4,5-Tetrachlorobenzene	5000 (2270)
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1 (0.454)
1,1,1,2-Tetrachloroethane	100 (45.4)
1,1,2,2-Tetrachloroethane	100 (45.4)
Tetrachloroethylene	100 (45.4)
2,3,4,6-Tetrachlorophenol	10 (4.54)
Tetraethyl pyrophosphate	10 (4.54)
Tetraethyl lead	10 (4.54)
Tetraethyldithiopyrophosphate	100 (45.4)
Tetrahydrofuran	1000 (454)
Tetranitromethane	10 (4.54)
Tetraphosphoric acid, hexaethyl ester	100 (45.4)
Thallic oxide	100 (45.4)
Thallium ϵ	1000 (454)
Thallium (I) acetate	100 (45.4)
Thallium (I) carbonate	100 (45.4)
Thallium chloride TlCl	100 (45.4)
Thallium (I) nitrate	100 (45.4)
Thallium oxide Tl ₂ O ₃	100 (45.4)
Thallium (I) selenite	1000 (454)
Thallium (I) sulfate	100 (45.4)
Thioacetamide	10 (4.54)
Thiodicarb	100 (45.4)
Thiodiphosphoric acid, tetraethyl ester	100 (45.4)
Thiofanox	100 (45.4)
Thioimidodicarbonic diamide [(H ₂ N)C(S)] ₂ NH	100 (45.4)
Thiomethanol	100 (45.4)
Thioperoxydicarbonic diamide [(H ₂ N)C(S)] ₂ S ₂ , tetramethyl-	10 (4.54)
Thiophanate-methyl	10 (4.54)
Thiophenol	100 (45.4)
Thiosemicarbazide	100 (45.4)
Thiourea	10 (4.54)
Thiourea, (2-chlorophenyl)-	100 (45.4)
Thiourea, 1-naphthalenyl-	100 (45.4)
Thiourea, phenyl-	100 (45.4)
Thiram	10 (4.54)
Tirpate	100 (45.4)
Titanium tetrachloride	1000 (454)
Toluene	1000 (454)
Toluenediamine	10 (4.54)
2,4-Toluene diamine	10 (4.54)
Toluene diisocyanate	100 (45.4)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
2,4-Toluene diisocyanate	100 (45.4)
o-Toluidine	100 (45.4)
p-Toluidine	100 (45.4)
o-Toluidine hydrochloride	100 (45.4)
Toxaphene	1 (0.454)
2,4,5-TP acid	100 (45.4)
2,4,5-TP esters	100 (45.4)
Triallate	100 (45.4)
1H-1,2,4-Triazol-3-amine	10 (4.54)
Trichlorfon	100 (45.4)
1,2,4-Trichlorobenzene	100 (45.4)
1,1,1-Trichloroethane	1000 (454)
1,1,2-Trichloroethane	100 (45.4)
Trichloroethylene	100 (45.4)
Trichloromethanesulfonyl chloride	100 (45.4)
Trichloromonofluoromethane	5000 (2270)
Trichlorophenol	10 (4.54)
2,3,4-Trichlorophenol	
2,3,5-Trichlorophenol	
2,3,6-Trichlorophenol	
3,4,5-Trichlorophenol	
2,4,5-Trichlorophenol	10 (4.54)
2,4,6-Trichlorophenol	10 (4.54)
Triethanolamine dodecylbenzenesulfonate	1000 (454)
Triethylamine	5000 (2270)
Trifluralin	10 (4.54)
Trimethylamine	100 (45.4)
2,2,4-Trimethylpentane	1000 (454)
1,3,5-Trinitrobenzene	10 (4.54)
1,3,5-Trioxane, 2,4,6-trimethyl-	1000 (454)
Tris(2,3-dibromopropyl) phosphate	10 (4.54)
Trypan blue	10 (4.54)
D002 Unlisted Hazardous Wastes Characteristic of Corrosivity	100 (45.4)
D001 Unlisted Hazardous Wastes Characteristic of Ignitability	100 (45.4)
D003 Unlisted Hazardous Wastes Characteristic of Reactivity	100 (45.4)
D004–D043 Unlisted Hazardous Wastes Characteristic of Toxicity:	
Arsenic (D004)	1 (0.454)
Barium (D005)	1000 (454)
Benzene (D018)	10 (4.54)
Cadmium (D006)	10 (4.54)
Carbon tetrachloride (D019)	10 (4.54)
Chlordane (D020)	1 (0.454)
Chlorobenzene (D021)	100 (45.4)
Chloroform (D022)	10 (4.54)
Chromium (D007)	10 (4.54)
o-Cresol (D023)	100 (45.4)
m-Cresol (D024)	100 (45.4)
p-Cresol (D025)	100 (45.4)
Cresol (D026)	100 (45.4)
2,4-D (D016)	100 (45.4)
1,4-Dichlorobenzene (D027)	100 (45.4)
1,2-Dichloroethane (D028)	100 (45.4)
1,1-Dichloroethylene (D029)	100 (45.4)
2,4-Dinitrotoluene (D030)	10 (4.54)
Endrin (D012)	1 (0.454)
Heptachlor (and epoxide) (D031)	1 (0.454)
Hexachlorobenzene (D032)	10 (4.54)
Hexachlorobutadiene (D033)	1 (0.454)
Hexachloroethane (D034)	100 (45.4)
Lead (D008)	10 (4.54)
Lindane (D013)	1 (0.454)
Mercury (D009)	1 (0.454)
Methoxychlor (D014)	1 (0.454)
Methyl ethyl ketone (D035)	5000 (2270)
Nitrobenzene (D036)	1000 (454)
Pentachlorophenol (D037)	10 (4.54)
Pyridine (D038)	1000 (454)
Selenium (D010)	10 (4.54)
Silver (D011)	1 (0.454)
Tetrachloroethylene (D039)	100 (45.4)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Toxaphene (D015)	1 (0.454)
Trichloroethylene (D040)	100 (45.4)
2,4,5-Trichlorophenol (D041)	10 (4.54)
2,4,6-Trichlorophenol (D042)	10 (4.54)
2,4,5-TP (D017)	100 (45.4)
Vinyl chloride (D043)	1 (0.454)
Uracil mustard	10 (4.54)
Uranyl acetate	100 (45.4)
Uranyl nitrate	100 (45.4)
Urea, N-ethyl-N-nitroso-	1 (0.454)
Urea, N-methyl-N-nitroso-	1 (0.454)
Urethane	100 (45.4)
Vanadic acid, ammonium salt	1000 (454)
Vanadium oxide V ₂ O ₅	1000 (454)
Vanadium pentoxide	1000 (454)
Vanadyl sulfate	1000 (454)
Vinyl acetate	5000 (2270)
Vinyl acetate monomer	5000 (2270)
Vinylamine, N-methyl-N-nitroso-	10 (4.54)
Vinyl bromide	100 (45.4)
Vinyl chloride	1 (0.454)
Vinylidene chloride	100 (45.4)
Warfarin, & salts	100 (45.4)
Xylene	100 (45.4)
m-Xylene	1000 (454)
o-Xylene	1000 (454)
p-Xylene	100 (45.4)
Xylene (mixed)	100 (45.4)
Xylenes (isomers and mixture)	100 (45.4)
Xylenol	1000 (454)
Yohimban-16-carboxylic acid,11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester (3beta,16beta,17alpha,18beta, 20alpha)	5000 (2270)
Zinc	1000 (454)
Zinc acetate	1000 (454)
Zinc ammonium chloride	1000 (454)
Zinc, bis(dimethylcarbamodithioato-S,S')	10 (4.54)
Zinc borate	1000 (454)
Zinc bromide	1000 (454)
Zinc carbonate	1000 (454)
Zinc chloride	1000 (454)
Zinc cyanide Zn(CN) ₂	10 (4.54)
Zinc fluoride	1000 (454)
Zinc formate	1000 (454)
Zinc hydrosulfite	1000 (454)
Zinc nitrate	1000 (454)
Zinc phenolsulfonate	5000 (2270)
Zinc phosphide Zn ₃ P ₂	100 (45.4)
Zinc silicofluoride	5000 (2270)
Zinc sulfate	1000 (454)
Ziram	10 (4.54)
Zirconium nitrate	5000 (2270)
Zirconium potassium fluoride	1000 (454)
Zirconium sulfate	5000 (2270)
Zirconium tetrachloride	5000 (2270)
F001	10 (4.54)
(a) Tetrachloroethylene	100 (45.4)
(b) Trichloroethylene	100 (45.4)
(c) Methylene chloride	1000 (454)
(d) 1,1,1-Trichloroethane	1000 (454)
(e) Carbon tetrachloride	10 (4.54)
(f) Chlorinated fluorocarbons	5000 (2270)
F002	10 (4.54)
(a) Tetrachloroethylene	100 (45.4)
(b) Methylene chloride	1000 (454)
(c) Trichloroethylene	100 (45.4)
(d) 1,1,1-Trichloroethane	1000 (454)
(e) Chlorobenzene	100 (45.4)
(f) 1,1,2-Trichloro-1,2,2-trifluoroethane	5000 (2270)
(g) o-Dichlorobenzene	100 (45.4)
(h) Trichlorofluoromethane	5000 (2270)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
F003 (i) 1,1,2-Trichloroethane	100 (45.4)
(a) Xylene	100 (45.4)
(b) Acetone	1000 (454)
(c) Ethyl acetate	5000 (2270)
(d) Ethylbenzene	5000 (2270)
(e) Ethyl ether	1000 (454)
(f) Methyl isobutyl ketone	100 (45.4)
(g) n-Butyl alcohol	5000 (2270)
(h) Cyclohexanone	5000 (2270)
(i) Methanol	5000 (2270)
F004 (a) Cresols/Cresylic acid	100 (45.4)
(b) Nitrobenzene	100 (45.4)
F005 (a) Toluene	1000 (454)
(b) Methyl ethyl ketone	5000 (2270)
(c) Carbon disulfide	100 (45.4)
(d) Isobutanol	5000 (2270)
(e) Pyridine	1000 (454)
F006	10 (4.54)
F007	10 (4.54)
F008	10 (4.54)
F009	10 (4.54)
F010	10 (4.54)
F011	10 (4.54)
F012	10 (4.54)
F019	10 (4.54)
F020	1 (0.454)
F021	1 (0.454)
F022	1 (0.454)
F023	1 (0.454)
F024	1 (0.454)
F025	1 (0.454)
F026	1 (0.454)
F027	1 (0.454)
F028	1 (0.454)
F032	1 (0.454)
F034	1 (0.454)
F035	1 (0.454)
F037	1 (0.454)
F038	1 (0.454)
F039	1 (0.454)
K001	1 (0.454)
K002	10 (4.54)
K003	10 (4.54)
K004	10 (4.54)
K005	10 (4.54)
K006	10 (4.54)
K007	10 (4.54)
K008	10 (4.54)
K009	10 (4.54)
K010	10 (4.54)
K011	10 (4.54)
K013	10 (4.54)
K014	5000 (2270)
K015	10 (4.54)
K016	1 (0.454)
K017	10 (4.54)
K018	1 (0.454)
K019	1 (0.454)
K020	1 (0.454)
K021	10 (4.54)
K022	1 (0.454)
K023	5000 (2270)
K024	5000 (2270)
K025	10 (4.54)
K026	1000 (454)
K027	10 (4.54)
K028	1 (0.454)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
K029	1 (0.454)
K030	1 (0.454)
K031	1 (0.454)
K032	10 (4.54)
K033	10 (4.54)
K034	10 (4.54)
K035	1 (0.454)
K036	1 (0.454)
K037	1 (0.454)
K038	10 (4.54)
K039	10 (4.54)
K040	10 (4.54)
K041	1 (0.454)
K042	10 (4.54)
K043	10 (4.54)
K044	10 (4.54)
K045	10 (4.54)
K046	10 (4.54)
K047	10 (4.54)
K048	10 (4.54)
K049	10 (4.54)
K050	10 (4.54)
K051	10 (4.54)
K052	10 (4.54)
K060	1 (0.454)
K061	10 (4.54)
K062	10 (4.54)
K064	10 (4.54)
K065	10 (4.54)
K066	10 (4.54)
K069	10 (4.54)
K071	1 (0.454)
K073	10 (4.54)
K083	100 (45.4)
K084	1 (0.454)
K085	10 (4.54)
K086	10 (4.54)
K087	100 (45.4)
K088	10 (4.54)
K090	10 (4.54)
K091	10 (4.54)
K093	5000 (2270)
K094	5000 (2270)
K095	100 (45.4)
K096	100 (45.4)
K097	1 (0.454)
K098	1 (0.454)
K099	10 (4.54)
K100	10 (4.54)
K101	1 (0.454)
K102	1 (0.454)
K103	100 (45.4)
K104	10 (4.54)
K105	10 (4.54)
K106	1 (0.454)
K107	10 (4.54)
K108	10 (4.54)
K109	10 (4.54)
K110	10 (4.54)
K111	10 (4.54)
K112	10 (4.54)
K113	10 (4.54)
K114	10 (4.54)
K115	10 (4.54)
K116	10 (4.54)
K117	1 (0.454)
K118	1 (0.454)
K123	10 (4.54)
K124	10 (4.54)
K125	10 (4.54)

TABLE 1 TO APPENDIX A—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES—Continued

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
K126	10 (4.54)
K131	100 (45.4)
K132	1000 (454)
K136	1 (0.454)
K141	1 (0.454)
K142	1 (0.454)
K143	1 (0.454)
K144	1 (0.454)
K145	1 (0.454)
K147	1 (0.454)
K148	1 (0.454)
K149	10 (4.54)
K150	10 (4.54)
K151	10 (4.54)
K156	10 (4.54)
K157	10 (4.54)
K158	10 (4.54)
K159	10 (4.54)
K161	1 (0.454)
K169	10 (4.54)
K170	1 (0.454)
K171	1 (0.454)
K172	1 (0.454)
K174	1 (0.454)
K175	1 (0.454)
K176	1 (0.454)
K177	5000 (2270)
K178	1000 (454)
K181	1 (0.454)

^g The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 micrometers (0.004 inches).

^h The RQ for asbestos is limited to friable forms only.

ⁱ Indicates that the name was added by PHMSA because (1) the name is a synonym for a specific hazardous substance and (2) the name appears in the Hazardous Materials Table as a proper shipping name.

^j To provide consistency with EPA regulations, two entries with different CAS numbers are provided. Refer to the EPA Table 302.4—List of Hazardous Substances and Reportable Quantities for an explanation of the two entries.

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

TABLE 2 TO APPENDIX A—RADIONUCLIDES

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Actinium-224	89	100 (3.7)
Actinium-225	89	1 (0.37)
Actinium-226	89	10 (.37)
Actinium-227	89	0.001 (.00037)
Actinium-228	89	10 (.37)
Aluminum-26	13	10 (.37)
Americium-237	95	1000 (37)
Americium-238	95	100 (3.7)
Americium-239	95	100 (3.7)
Americium-240	95	10 (.37)
Americium-241	95	0.01 (.0037)
Americium-242	95	100 (3.7)
Americium-242m	95	0.01 (.0037)
Americium-243	95	0.01 (.0037)
Americium-244	95	10 (.37)
Americium-244m	95	1000 (37)
Americium-245	95	1000 (37)
Americium-246	95	1000 (37)
Americium-246m	95	1000 (37)
Antimony-115	51	1000 (37)
Antimony-116	51	1000 (37)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Antimony-116m	51	100 (3.7)
Antimony-117	51	1000 (37)
Antimony-118m	51	10 (.37)
Antimony-119	51	1000 (37)
Antimony-120 (16 min)	51	1000 (37)
Antimony-120 (5.76 day)	51	10 (.37)
Antimony-122	51	10 (.37)
Antimony-124	51	10 (.37)
Antimony-124m	51	1000 (37)
Antimony-125	51	10 (.37)
Antimony-126	51	10 (.37)
Antimony-126m	51	1000 (37)
Antimony-127	51	10 (.37)
Antimony-128 (10.4 min)	51	1000 (37)
Antimony-128 (9.01 hr)	51	10 (.37)
Antimony-129	51	100 (3.7)
Antimony-130	51	100 (3.7)
Antimony-131	51	1000 (37)
Argon-39	18	1000 (37)
Argon-41	18	10 (.37)
Arsenic-69	33	1000 (37)
Arsenic-70	33	100 (3.7)
Arsenic-71	33	100 (3.7)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Arsenic-72	33	10 (.37)
Arsenic-73	33	100 (3.7)
Arsenic-74	33	10 (.37)
Arsenic-76	33	100 (3.7)
Arsenic-77	33	1000 (37)
Arsenic-78	33	100 (3.7)
Astatine-207	85	100 (3.7)
Astatine-211	85	100 (3.7)
Barium-126	56	1000 (37)
Barium-128	56	10 (.37)
Barium-131	56	10 (.37)
Barium-131m	56	1000 (37)
Barium-133	56	10 (.37)
Barium-133m	56	100 (3.7)
Barium-135m	56	1000 (37)
Barium-139	56	1000 (37)
Barium-140	56	10 (.37)
Barium-141	56	1000 (37)
Barium-142	56	1000 (37)
Berkelium-245	97	100 (3.7)
Berkelium-246	97	10 (.37)
Berkelium-247	97	0.01 (.00037)
Berkelium-249	97	1 (.037)
Berkelium-250	97	100 (3.7)
Beryllium-10	4	1 (.037)
Beryllium-7	4	100 (3.7)
Bismuth-200	83	100 (3.7)
Bismuth-201	83	100 (3.7)
Bismuth-202	83	1000 (37)
Bismuth-203	83	10 (.37)
Bismuth-205	83	10 (.37)
Bismuth-206	83	10 (.37)
Bismuth-207	83	10 (.37)
Bismuth-210	83	10 (.37)
Bismuth-210m	83	0.1 (.0037)
Bismuth-212	83	100 (3.7)
Bismuth-213	83	100 (3.7)
Bismuth-214	83	100 (3.7)
Bromine-74	35	100 (3.7)
Bromine-74m	35	100 (3.7)
Bromine-75	35	100 (3.7)
Bromine-76	35	10 (.37)
Bromine-77	35	100 (3.7)
Bromine-80	35	1000 (37)
Bromine-80m	35	1000 (37)
Bromine-82	35	10 (.37)
Bromine-83	35	1000 (37)
Bromine-84	35	100 (3.7)
Cadmium-104	48	1000 (37)
Cadmium-107	48	1000 (37)
Cadmium-109	48	1 (.037)
Cadmium-113	48	0.1 (.0037)
Cadmium-113m	48	0.1 (.0037)
Cadmium-115	48	100 (3.7)
Cadmium-115m	48	10 (.37)
Cadmium-117	48	100 (3.7)
Cadmium-117m	48	10 (.37)
Calcium-41	20	10 (.37)
Calcium-45	20	10 (.37)
Calcium-47	20	10 (.37)
Californium-244	98	1000 (37)
Californium-246	98	10 (.37)
Californium-248	98	0.1 (.0037)
Californium-249	98	0.01 (.00037)
Californium-250	98	0.01 (.00037)
Californium-251	98	0.01 (.00037)
Californium-252	98	0.1 (.0037)
Californium-253	98	10 (.37)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Californium-254	98	0.1 (.0037)
Carbon-11	6	1000 (37)
Carbon-14	6	10 (.37)
Cerium-134	58	10 (.37)
Cerium-135	58	10 (.37)
Cerium-137	58	1000 (37)
Cerium-137m	58	100 (3.7)
Cerium-139	58	100 (3.7)
Cerium-141	58	10 (.37)
Cerium-143	58	100 (3.7)
Cerium-144	58	1 (.037)
Cesium-125	55	1000 (37)
Cesium-127	55	100 (3.7)
Cesium-129	55	100 (3.7)
Cesium-130	55	1000 (37)
Cesium-131	55	1000 (37)
Cesium-132	55	10 (.37)
Cesium-134	55	1 (.037)
Cesium-134m	55	1000 (37)
Cesium-135	55	10 (.37)
Cesium-135m	55	100 (3.7)
Cesium-136	55	10 (.37)
Cesium-137	55	1 (.037)
Cesium-138	55	100 (3.7)
Chlorine-36	17	10 (.37)
Chlorine-38	17	100 (3.7)
Chlorine-39	17	100 (3.7)
Chromium-48	24	100 (3.7)
Chromium-49	24	1000 (37)
Chromium-51	24	1000 (37)
Cobalt-55	27	10 (.37)
Cobalt-56	27	10 (.37)
Cobalt-57	27	100 (3.7)
Cobalt-58	27	10 (.37)
Cobalt-58m	27	1000 (37)
Cobalt-60	27	10 (.37)
Cobalt-60m	27	1000 (37)
Cobalt-61	27	1000 (37)
Cobalt-62m	27	1000 (37)
Copper-60	29	100 (3.7)
Copper-61	29	100 (3.7)
Copper-64	29	1000 (37)
Copper-67	29	100 (3.7)
Curium-238	96	1000 (37)
Curium-240	96	1 (.037)
Curium-241	96	10 (.37)
Curium-242	96	1 (.037)
Curium-243	96	0.01 (.00037)
Curium-244	96	0.01 (.00037)
Curium-245	96	0.01 (.00037)
Curium-246	96	0.01 (.00037)
Curium-247	96	0.01 (.00037)
Curium-248	96	0.001 (.000037)
Curium-249	96	1000 (37)
Dysprosium-155	66	100 (3.7)
Dysprosium-157	66	100 (3.7)
Dysprosium-159	66	100 (3.7)
Dysprosium-165	66	1000 (37)
Dysprosium-166	66	10 (.37)
Einsteinium-250	99	10 (.37)
Einsteinium-251	99	1000 (37)
Einsteinium-253	99	10 (.37)
Einsteinium-254	99	0.1 (.0037)
Einsteinium-254m	99	1 (.037)
Erbium-161	68	100 (3.7)
Erbium-165	68	1000 (37)
Erbium-169	68	100 (3.7)
Erbium-171	68	100 (3.7)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Erbium-172	68	10 (.37)
Europlutium-145	63	10 (.37)
Europlutium-146	63	10 (.37)
Europlutium-147	63	10 (.37)
Europlutium-148	63	10 (.37)
Europlutium-149	63	100 (3.7)
Europlutium-150 (12.6 hr)	63	1000 (37)
Europlutium-150 (34.2 yr)	63	10 (.37)
Europlutium-152	63	10 (.37)
Europlutium-152m	63	100 (3.7)
Europlutium-154	63	10 (.37)
Europlutium-155	63	10 (.37)
Europlutium-156	63	10 (.37)
Europlutium-157	63	10 (.37)
Europlutium-158	63	1000 (37)
Fermium-252	100	10 (.37)
Fermium-253	100	10 (.37)
Fermium-254	100	100 (3.7)
Fermium-255	100	100 (3.7)
Fermium-257	100	1 (.037)
Fluorine-18	9	1000 (37)
Francium-222	87	100 (3.7)
Francium-223	87	100 (3.7)
Gadolinium-145	64	100 (3.7)
Gadolinium-146	64	10 (.37)
Gadolinium-147	64	10 (.37)
Gadolinium-148	64	0.001 (.000037)
Gadolinium-149	64	100 (3.7)
Gadolinium-151	64	100 (3.7)
Gadolinium-152	64	0.001 (.000037)
Gadolinium-153	64	10 (.37)
Gadolinium-159	64	1000 (37)
Gallium-65	31	1000 (37)
Gallium-66	31	10 (.37)
Gallium-67	31	100 (3.7)
Gallium-68	31	1000 (37)
Gallium-70	31	1000 (37)
Gallium-72	31	10 (.37)
Gallium-73	31	100 (3.7)
Germanium-66	32	100 (3.7)
Germanium-67	32	1000 (37)
Germanium-68	32	10 (.37)
Germanium-69	32	10 (.37)
Germanium-71	32	1000 (37)
Germanium-75	32	1000 (37)
Germanium-77	32	10 (.37)
Germanium-78	32	1000 (37)
Gold-193	79	100 (3.7)
Gold-194	79	10 (.37)
Gold-195	79	100 (3.7)
Gold-198	79	100 (3.7)
Gold-198m	79	10 (.37)
Gold-199	79	100 (3.7)
Gold-200	79	1000 (37)
Gold-200m	79	10 (.37)
Gold-201	79	1000 (37)
Hafnium-170	72	100 (3.7)
Hafnium-172	72	1 (.037)
Hafnium-173	72	100 (3.7)
Hafnium-175	72	100 (3.7)
Hafnium-177m	72	1000 (37)
Hafnium-178m	72	0.1 (.0037)
Hafnium-179m	72	100 (3.7)
Hafnium-180m	72	100 (3.7)
Hafnium-181	72	10 (.37)
Hafnium-182	72	0.1 (.0037)
Hafnium-182m	72	100 (3.7)
Hafnium-183	72	100 (3.7)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Hafnium-184	72	100 (3.7)
Holmium-155	67	1000 (37)
Holmium-157	67	1000 (37)
Holmium-159	67	1000 (37)
Holmium-161	67	1000 (37)
Holmium-162	67	1000 (37)
Holmium-162m	67	1000 (37)
Holmium-164	67	1000 (37)
Holmium-164m	67	1000 (37)
Holmium-166	67	100 (3.7)
Holmium-166m	67	1 (.037)
Holmium-167	67	100 (3.7)
Hydrogen-3	1	100 (3.7)
Indium-109	49	100 (3.7)
Indium-110 (4.9 hr)	49	10 (.37)
Indium-110 (69.1 min)	49	100 (3.7)
Indium-111	49	100 (3.7)
Indium-112	49	1000 (37)
Indium-113m	49	1000 (37)
Indium-114m	49	10 (.37)
Indium-115	49	0.1 (.0037)
Indium-115m	49	100 (3.7)
Indium-116m	49	100 (3.7)
Indium-117	49	1000 (37)
Indium-117m	49	100 (3.7)
Indium-119m	49	1000 (37)
Iodine-120	53	10 (.37)
Iodine-120m	53	100 (3.7)
Iodine-121	53	100 (3.7)
Iodine-123	53	10 (.37)
Iodine-124	53	0.1 (.0037)
Iodine-125	53	0.01 (.00037)
Iodine-126	53	0.01 (.00037)
Iodine-128	53	1000 (37)
Iodine-129	53	0.001 (.000037)
Iodine-130	53	1 (.037)
Iodine-131	53	0.01 (.00037)
Iodine-132	53	10 (.37)
Iodine-132m	53	10 (.37)
Iodine-133	53	0.1 (.0037)
Iodine-134	53	100 (3.7)
Iodine-135	53	10 (.37)
Iridium-182	77	1000 (37)
Iridium-184	77	100 (3.7)
Iridium-185	77	100 (3.7)
Iridium-186	77	10 (.37)
Iridium-187	77	100 (3.7)
Iridium-188	77	10 (.37)
Iridium-189	77	100 (3.7)
Iridium-190	77	10 (.37)
Iridium-190m	77	1000 (37)
Iridium-192	77	10 (.37)
Iridium-192m	77	100 (3.7)
Iridium-194	77	100 (3.7)
Iridium-194m	77	10 (.37)
Iridium-195	77	1000 (37)
Iridium-195m	77	100 (3.7)
Iron-52	26	100 (3.7)
Iron-55	26	100 (3.7)
Iron-59	26	10 (.37)
Iron-60	26	0.1 (.0037)
Krypton-74	36	10 (.37)
Krypton-76	36	10 (.37)
Krypton-77	36	10 (.37)
Krypton-79	36	100 (3.7)
Krypton-81	36	1000 (37)
Krypton-83m	36	1000 (37)
Krypton-85	36	1000 (37)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Krypton-85m	36	100 (3.7)
Krypton-87	36	10 (.37)
Krypton-88	36	10 (.37)
Lanthanum-131	57	1000 (37)
Lanthanum-132	57	100 (3.7)
Lanthanum-135	57	1000 (37)
Lanthanum-137	57	10 (.37)
Lanthanum-138	57	1 (.037)
Lanthanum-140	57	10 (.37)
Lanthanum-141	57	1000 (37)
Lanthanum-142	57	100 (3.7)
Lanthanum-143	57	1000 (37)
Lead-195m	82	1000 (37)
Lead-198	82	100 (3.7)
Lead-199	82	100 (3.7)
Lead-200	82	100 (3.7)
Lead-201	82	100 (3.7)
Lead-202	82	1 (.037)
Lead-202m	82	10 (.37)
Lead-203	82	100 (3.7)
Lead-205	82	100 (3.7)
Lead-209	82	1000 (37)
Lead-210	82	0.01 (.00037)
Lead-211	82	100 (3.7)
Lead-212	82	10 (.37)
Lead-214	82	100 (3.7)
Lutetium-169	71	10 (.37)
Lutetium-170	71	10 (.37)
Lutetium-171	71	10 (.37)
Lutetium-172	71	10 (.37)
Lutetium-173	71	100 (3.7)
Lutetium-174	71	10 (.37)
Lutetium-174m	71	10 (.37)
Lutetium-176	71	1 (.037)
Lutetium-176m	71	1000 (37)
Lutetium-177	71	100 (3.7)
Lutetium-177m	71	10 (.37)
Lutetium-178	71	1000 (37)
Lutetium-178m	71	1000 (37)
Lutetium-179	71	1000 (37)
Magnesium-28	12	10 (.37)
Manganese-51	25	1000 (37)
Manganese-52	25	10 (.37)
Manganese-52m	25	1000 (37)
Manganese-53	25	1000 (37)
Manganese-54	25	10 (.37)
Manganese-56	25	100 (3.7)
Mendelevium-257	101	100 (3.7)
Mendelevium-258	101	1 (.037)
Mercury-193	80	100 (3.7)
Mercury-193m	80	10 (.37)
Mercury-194	80	0.1 (.0037)
Mercury-195	80	100 (3.7)
Mercury-195m	80	100 (3.7)
Mercury-197	80	1000 (37)
Mercury-197m	80	1000 (37)
Mercury-199m	80	1000 (37)
Mercury-203	80	10 (.37)
Molybdenum-101	42	1000 (37)
Molybdenum-90	42	100 (3.7)
Molybdenum-93	42	100 (3.7)
Molybdenum-93m	42	10 (.37)
Molybdenum-99	42	100 (3.7)
Neodymium-136	60	1000 (37)
Neodymium-138	60	1000 (37)
Neodymium-139	60	1000 (37)
Neodymium-139m	60	100 (3.7)
Neodymium-141	60	1000 (37)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Neodymium-147	60	10 (.37)
Neodymium-149	60	100 (3.7)
Neodymium-151	60	1000 (37)
Neptunium-232	93	1000 (37)
Neptunium-233	93	1000 (37)
Neptunium-234	93	10 (.37)
Neptunium-235	93	1000 (37)
Neptunium-236 (1.2 E 5 yr)	93	0.1 (.0037)
Neptunium-236 (22.5 hr)	93	100 (3.7)
Neptunium-237	93	0.01 (.00037)
Neptunium-238	93	10 (.37)
Neptunium-239	93	100 (3.7)
Neptunium-240	93	100 (3.7)
Nickel-56	28	10 (.37)
Nickel-57	28	10 (.37)
Nickel-59	28	100 (3.7)
Nickel-63	28	100 (3.7)
Nickel-65	28	100 (3.7)
Nickel-66	28	10 (.37)
Niobium-88	41	100 (3.7)
Niobium-89 (122 min)	41	100 (3.7)
Niobium-89 (66 min)	41	100 (3.7)
Niobium-90	41	10 (.37)
Niobium-93m	41	100 (3.7)
Niobium-94	41	10 (.37)
Niobium-95	41	10 (.37)
Niobium-95m	41	100 (3.7)
Niobium-96	41	10 (.37)
Niobium-97	41	100 (3.7)
Niobium-98	41	1000 (37)
Osmium-180	76	1000 (37)
Osmium-181	76	100 (3.7)
Osmium-182	76	100 (3.7)
Osmium-185	76	10 (.37)
Osmium-189m	76	1000 (37)
Osmium-191	76	100 (3.7)
Osmium-191m	76	1000 (37)
Osmium-193	76	100 (3.7)
Osmium-194	76	1 (.037)
Palladium-100	46	100 (3.7)
Palladium-101	46	100 (3.7)
Palladium-103	46	100 (3.7)
Palladium-107	46	100 (3.7)
Palladium-109	46	1000 (37)
Phosphorus-32	15	0.1 (.0037)
Phosphorus-33	15	1 (.037)
Platinum-186	78	100 (3.7)
Platinum-188	78	100 (3.7)
Platinum-189	78	100 (3.7)
Platinum-191	78	100 (3.7)
Platinum-193	78	1000 (37)
Platinum-193m	78	100 (3.7)
Platinum-195m	78	100 (3.7)
Platinum-197	78	1000 (37)
Platinum-197m	78	1000 (37)
Platinum-199	78	1000 (37)
Platinum-200	78	100 (3.7)
Plutonium-234	94	1000 (37)
Plutonium-235	94	1000 (37)
Plutonium-236	94	0.1 (.0037)
Plutonium-237	94	1000 (37)
Plutonium-238	94	0.01 (.00037)
Plutonium-239	94	0.01 (.00037)
Plutonium-240	94	0.01 (.00037)
Plutonium-241	94	1 (.037)
Plutonium-242	94	0.01 (.00037)
Plutonium-243	94	1000 (37)
Plutonium-244	94	0.01 (.00037)

§ 172.101

49 CFR Ch. I (10–1–10 Edition)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Plutonium-245	94	100 (3.7)
Polonium-203	84	100 (3.7)
Polonium-205	84	100 (3.7)
Polonium-207	84	10 (.37)
Polonium-210	84	0.01 (.00037)
Potassium-40	19	1 (.037)
Potassium-42	19	100 (3.7)
Potassium-43	19	10 (.37)
Potassium-44	19	100 (3.7)
Potassium-45	19	1000 (37)
Praseodymium-136	59	1000 (37)
Praseodymium-137	59	1000 (37)
Praseodymium-138m	59	100 (3.7)
Praseodymium-139	59	1000 (37)
Praseodymium-142	59	100 (3.7)
Praseodymium-142m	59	1000 (37)
Praseodymium-143	59	10 (.37)
Praseodymium-144	59	1000 (37)
Praseodymium-145	59	1000 (37)
Praseodymium-147	59	1000 (37)
Promethium-141	61	1000 (37)
Promethium-143	61	100 (3.7)
Promethium-144	61	10 (.37)
Promethium-145	61	100 (3.7)
Promethium-146	61	10 (.37)
Promethium-147	61	10 (.37)
Promethium-148	61	10 (.37)
Promethium-148m	61	10 (.37)
Promethium-149	61	100 (3.7)
Promethium-150	61	100 (3.7)
Promethium-151	61	100 (3.7)
Protactinium-227	91	100 (3.7)
Protactinium-228	91	10 (.37)
Protactinium-230	91	10 (.37)
Protactinium-231	91	0.01 (.00037)
Protactinium-232	91	10 (.37)
Protactinium-233	91	100 (3.7)
Protactinium-234	91	10 (.37)
RADIONUCLIDES \$†		1 (.037)
Radium-223	88	1 (.037)
Radium-224	88	10 (.37)
Radium-225	88	1 (.037)
Radium-226 **	88	0.1 (.0037)
Radium-227	88	1000 (37)
Radium-228	88	0.1 (.0037)
Radon-220	86	0.1 (.0037)
Radon-222	86	0.1 (.0037)
Rhenium-177	75	1000 (37)
Rhenium-178	75	1000 (37)
Rhenium-181	75	100 (3.7)
Rhenium-182 (12.7 hr)	75	10 (.37)
Rhenium-182 (64.0 hr)	75	10 (.37)
Rhenium-184	75	10 (.37)
Rhenium-184m	75	10 (.37)
Rhenium-186	75	100 (3.7)
Rhenium-186m	75	10 (.37)
Rhenium-187	75	1000 (37)
Rhenium-188	75	1000 (37)
Rhenium-188m	75	1000 (37)
Rhenium-189	75	1000 (37)
Rhodium-100	45	10 (.37)
Rhodium-101	45	10 (.37)
Rhodium-101m	45	100 (3.7)
Rhodium-102	45	10 (.37)
Rhodium-102m	45	10 (.37)
Rhodium-103m	45	1000 (37)
Rhodium-105	45	100 (3.7)
Rhodium-106m	45	10 (.37)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Rhodium-107	45	1000 (37)
Rhodium-99	45	10 (.37)
Rhodium-99m	45	100 (3.7)
Rubidium-79	37	1000 (37)
Rubidium-81	37	100 (3.7)
Rubidium-81m	37	1000 (37)
Rubidium-82m	37	10 (.37)
Rubidium-83	37	10 (.37)
Rubidium-84	37	10 (.37)
Rubidium-86	37	10 (.37)
Rubidium-87	37	10 (.37)
Rubidium-88	37	1000 (37)
Rubidium-89	37	1000 (37)
Ruthenium-103	44	10 (.37)
Ruthenium-105	44	100 (3.7)
Ruthenium-106	44	1 (.037)
Ruthenium-94	44	1000 (37)
Ruthenium-97	44	100 (3.7)
Samarium-141	62	1000 (37)
Samarium-141m	62	1000 (37)
Samarium-142	62	1000 (37)
Samarium-145	62	100 (3.7)
Samarium-146	62	0.01 (.00037)
Samarium-147	62	0.01 (.00037)
Samarium-151	62	10 (.37)
Samarium-153	62	100 (3.7)
Samarium-155	62	1000 (37)
Samarium-156	62	100 (3.7)
Scandium-43	21	1000 (37)
Scandium-44	21	100 (3.7)
Scandium-44m	21	10 (.37)
Scandium-46	21	10 (.37)
Scandium-47	21	100 (3.7)
Scandium-48	21	10 (.37)
Scandium-49	21	1000 (37)
Selenium-70	34	1000 (37)
Selenium-73	34	10 (.37)
Selenium-73m	34	100 (3.7)
Selenium-75	34	10 (.37)
Selenium-79	34	10 (.37)
Selenium-81	34	1000 (37)
Selenium-81m	34	1000 (37)
Selenium-83	34	1000 (37)
Silicon-31	14	1000 (37)
Silicon-32	14	1 (.037)
Silver-102	47	100 (3.7)
Silver-103	47	1000 (37)
Silver-104	47	1000 (37)
Silver-104m	47	1000 (37)
Silver-105	47	10 (.37)
Silver-106	47	1000 (37)
Silver-106m	47	10 (.37)
Silver-108m	47	10 (.37)
Silver-110m	47	10 (.37)
Silver-111	47	10 (.37)
Silver-112	47	100 (3.7)
Silver-115	47	1000 (37)
Sodium-22	11	10 (.37)
Sodium-24	11	10 (.37)
Strontium-80	38	100 (3.7)
Strontium-81	38	1000 (37)
Strontium-83	38	100 (3.7)
Strontium-85	38	10 (.37)
Strontium-85m	38	1000 (37)
Strontium-87m	38	100 (3.7)
Strontium-89	38	10 (.37)
Strontium-90	38	0.1 (.0037)
Strontium-91	38	10 (.37)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Strontium-92	38	100 (3.7)
Sulfur-35	16	1 (.037)
Tantalum-172	73	100 (3.7)
Tantalum-173	73	100 (3.7)
Tantalum-174	73	100 (3.7)
Tantalum-175	73	100 (3.7)
Tantalum-176	73	10 (3.7)
Tantalum-177	73	1000 (37)
Tantalum-178	73	1000 (37)
Tantalum-179	73	1000 (37)
Tantalum-180	73	100 (3.7)
Tantalum-180m	73	1000 (37)
Tantalum-182	73	10 (3.7)
Tantalum-182m	73	1000 (37)
Tantalum-183	73	100 (3.7)
Tantalum-184	73	10 (3.7)
Tantalum-185	73	1000 (37)
Tantalum-186	73	1000 (37)
Technetium-101	43	1000 (37)
Technetium-104	43	1000 (37)
Technetium-93	43	100 (3.7)
Technetium-93m	43	1000 (37)
Technetium-94	43	10 (3.7)
Technetium-94m	43	100 (3.7)
Technetium-96	43	10 (3.7)
Technetium-96m	43	1000 (37)
Technetium-97	43	100 (3.7)
Technetium-97m	43	100 (3.7)
Technetium-98	43	10 (3.7)
Technetium-99	43	10 (3.7)
Technetium-99m	43	100 (3.7)
Tellurium-116	52	1000 (37)
Tellurium-121	52	10 (3.7)
Tellurium-121m	52	10 (3.7)
Tellurium-123	52	10 (3.7)
Tellurium-123m	52	10 (3.7)
Tellurium-125m	52	10 (3.7)
Tellurium-127	52	1000 (37)
Tellurium-127m	52	10 (3.7)
Tellurium-129	52	1000 (37)
Tellurium-129m	52	10 (3.7)
Tellurium-131	52	1000 (37)
Tellurium-131m	52	10 (3.7)
Tellurium-132	52	10 (3.7)
Tellurium-133	52	1000 (37)
Tellurium-133m	52	1000 (37)
Tellurium-134	52	1000 (37)
Terbium-147	65	100 (3.7)
Terbium-149	65	100 (3.7)
Terbium-150	65	100 (3.7)
Terbium-151	65	10 (3.7)
Terbium-153	65	100 (3.7)
Terbium-154	65	10 (3.7)
Terbium-155	65	100 (3.7)
Terbium-156	65	10 (3.7)
Terbium-156m (24.4 hr)	65	1000 (37)
Terbium-156m (5.0 hr)	65	1000 (37)
Terbium-157	65	100 (3.7)
Terbium-158	65	10 (3.7)
Terbium-160	65	10 (3.7)
Terbium-161	65	100 (3.7)
Thallium-194	81	1000 (37)
Thallium-194m	81	100 (3.7)
Thallium-195	81	100 (3.7)
Thallium-197	81	100 (3.7)
Thallium-198	81	10 (3.7)
Thallium-198m	81	100 (3.7)
Thallium-199	81	100 (3.7)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Thallium-200	81	10 (.37)
Thallium-201	81	1000 (37)
Thallium-202	81	10 (.37)
Thallium-204	81	10 (.37)
Thorium (Irradiated)	90	***
Thorium (Natural)	90	**
Thorium-226	90	100 (3.7)
Thorium-227	90	1 (.037)
Thorium-228	90	0.01 (.00037)
Thorium-229	90	0.001 (.000037)
Thorium-230	90	0.01 (.00037)
Thorium-231	90	100 (3.7)
Thorium-232 **	90	0.001 (.000037)
Thorium-234	90	100 (3.7)
Thulium-162	69	1000 (37)
Thulium-166	69	10 (3.7)
Thulium-167	69	100 (3.7)
Thulium-170	69	10 (3.7)
Thulium-171	69	100 (3.7)
Thulium-172	69	100 (3.7)
Thulium-173	69	100 (3.7)
Thulium-175	69	1000 (37)
Tin-110	50	100 (3.7)
Tin-111	50	1000 (37)
Tin-113	50	10 (3.7)
Tin-117m	50	100 (3.7)
Tin-119m	50	10 (3.7)
Tin-121	50	1000 (37)
Tin-121m	50	10 (3.7)
Tin-123	50	10 (3.7)
Tin-123m	50	1000 (37)
Tin-125	50	10 (3.7)
Tin-126	50	1 (.037)
Tin-127	50	100 (3.7)
Tin-128	50	1000 (37)
Titanium-44	22	1 (.037)
Titanium-45	22	1000 (37)
Tungsten-176	74	1000 (37)
Tungsten-177	74	100 (3.7)
Tungsten-178	74	100 (3.7)
Tungsten-179	74	1000 (37)
Tungsten-181	74	100 (3.7)
Tungsten-185	74	10 (3.7)
Tungsten-187	74	100 (3.7)
Tungsten-188	74	10 (3.7)
Uranium (Depleted)	92	***
Uranium (Irradiated)	92	***
Uranium (Natural)	92	**
Uranium Enriched 20% or greater	92	***
Uranium Enriched less than 20%	92	***
Uranium-230	92	1 (.037)
Uranium-231	92	1000 (37)
Uranium-232	92	0.01 (.00037)
Uranium-233	92	0.1 (.0037)
Uranium-234 **	92	0.1 (.0037)
Uranium-235 **	92	0.1 (.0037)
Uranium-236	92	0.1 (.0037)
Uranium-237	92	100 (3.7)
Uranium-238 **	92	0.1 (.0037)
Uranium-239	92	1000 (37)
Uranium-240	92	1000 (37)
Vanadium-47	23	1000 (37)
Vanadium-48	23	10 (3.7)
Vanadium-49	23	1000 (37)
Xenon-120	54	100 (3.7)
Xenon-121	54	10 (3.7)

§ 172.101

49 CFR Ch. I (10-1-10 Edition)

TABLE 2 TO APPENDIX A—RADIONUCLIDES—
Continued

(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci (TBq)
Xenon-122	54	100 (3.7)
Xenon-123	54	10 (.37)
Xenon-125	54	100 (3.7)
Xenon-127	54	100 (3.7)
Xenon-129m	54	1000 (37)
Xenon-131m	54	1000 (37)
Xenon-133	54	1000 (37)
Xenon-133m	54	1000 (37)
Xenon-135	54	100 (3.7)
Xenon-135m	54	10 (.37)
Xenon-138	54	10 (.37)
Ytterbium-162	70	1000 (37)
Ytterbium-166	70	10 (.37)
Ytterbium-167	70	1000 (37)
Ytterbium-169	70	10 (.37)
Ytterbium-175	70	100 (3.7)
Ytterbium-177	70	1000 (37)
Ytterbium-178	70	1000 (37)
Yttrium-86	39	10 (.37)
Yttrium-86m	39	1000 (37)
Yttrium-87	39	10 (.37)
Yttrium-88	39	10 (.37)
Yttrium-90	39	10 (.37)
Yttrium-90m	39	100 (3.7)
Yttrium-91	39	10 (.37)
Yttrium-91m	39	1000 (37)
Yttrium-92	39	100 (3.7)
Yttrium-93	39	100 (3.7)
Yttrium-94	39	1000 (37)
Yttrium-95	39	1000 (37)
Zinc-62	30	100 (3.7)
Zinc-63	30	1000 (37)
Zinc-65	30	10 (.37)
Zinc-69	30	1000 (37)
Zinc-69m	30	100 (3.7)
Zinc-71m	30	100 (3.7)
Zinc-72	30	100 (3.7)
Zirconium-86	40	100 (3.7)
Zirconium-88	40	10 (.37)
Zirconium-89	40	100 (3.7)
Zirconium-93	40	1 (.037)
Zirconium-95	40	10 (.37)
Zirconium-97	40	10 (.37)

§ The RQs for all radionuclides apply to chemical compounds containing the radionuclides and elemental forms regardless of the diameter of pieces of solid material.

† The RQ of one curie applies to all radionuclides not otherwise listed. Whenever the RQs in TABLE 1—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES and this table conflict, the lowest RQ shall apply. For example, uranyl acetate and uranyl nitrate have RQs shown in TABLE 1 of 100 pounds, equivalent to about one-tenth the RQ level for uranium-238 in this table.

** The method to determine the RQs for mixtures or solutions of radionuclides can be found in paragraph 7 of the note preceding TABLE 1 of this appendix. RQs for the following four common radionuclide mixtures are provided: radium-226 in secular equilibrium with its daughters (0.053 curie); natural uranium (0.1 curie); natural uranium in secular equilibrium with its daughters (0.052 curie); and natural thorium in secular equilibrium with its daughters (0.011 curie).

*** Indicates that the name was added by PHMSA because it appears in the list of radionuclides in 49 CFR 173.435. The reportable quantity (RQ), if not specifically listed elsewhere in this appendix, shall be determined in accordance with the procedures in paragraph 7 of this appendix.

APPENDIX B TO § 172.101—LIST OF MARINE POLLUTANTS

1. See § 171.4 of this subchapter for applicability to marine pollutants. This appendix lists potential marine pollutants as defined in § 171.8 of this subchapter.

2. Marine pollutants listed in this appendix are not necessarily listed by name in the § 172.101 Table. If a marine pollutant not listed by name or by synonym in the § 172.101 Table meets the definition of any hazard Class 1 through 8, then you must determine the class and division of the material in accordance with § 173.2a of this subchapter. You must also select the most appropriate hazardous material description and proper shipping name. If a marine pollutant not listed by name or by synonym in the § 172.101 Table does not meet the definition of any Class 1 through 8, then you must offer it for transportation under the most appropriate of the following two Class 9 entries: "Environmentally hazardous substances, liquid, n.o.s.," UN3082, or "Environmentally hazardous substances, solid, n.o.s.," UN3077.

3. This appendix contains two columns. The first column, entitled "S.M.P." (for severe marine pollutants), identifies whether a material is a severe marine pollutant. If the letters "PP" appear in this column for a material, the material is a severe marine pollutant, otherwise it is not. The second column, entitled "Marine Pollutant", lists the marine pollutants.

4. If a material is not listed in this appendix and meets the criteria for a marine pollutant as provided in Chapter 2.9 of the IMDG Code, (incorporated by reference; see § 171.7 of this subchapter), the material may be transported as a marine pollutant in accordance with the applicable requirements of this subchapter.

5. If a material or a solution meeting the definition of a marine pollutant in § 171.8 of this subchapter does not meet the criteria for a marine pollutant as provided in section 2.9.3.3 and 2.9.3.4 of the IMDG Code, (incorporated by reference; see § 171.7 of this subchapter), it may be excepted from the requirements of this subchapter as a marine pollutant if that exception is approved by the Associate Administrator.

LIST OF MARINE POLLUTANTS

S.M.P. (1)	Marine pollutant (2)
	Acetone cyanohydrin, stabilized
	Acetylene tetrabromide
	Acetylene tetrachloride
	Acraldehyde, inhibited
	Acrolein, inhibited
	Acrolein, stabilized
	Acrylic aldehyde, inhibited
	Alcohol C-12 - C-16 poly(1-6) ethoxylate
	Alcohol C-6 - C-17 (secondary)poly(3-6) ethoxylate
	Aldicarb

LIST OF MARINE POLLUTANTS—Continued

S.M.P. (1)	Marine pollutant (2)
PP	Aldrin
	Alkyl (c12-c14) dimethylamine
	Alkyl (c7-c9) nitrates
	Alkybenzenesulphonates, branched and straight chain (excluding C11–C13 straight chain or branched chain homologues)
	Allyl bromide
	ortho-Aminoanisole
	Aminocarb
	Ammonium dinitro-o-cresolate
	n-Amylbenzene
PP	Azinphos-ethyl
PP	Azinphos-methyl
	Barium cyanide
	Bendiocarb
	Benomyl
	Benquinox
	Benzyl chlorocarbonate
	Benzyl chloroformate
PP	Binapacryl
	<i>N,N</i> -Bis (2-hydroxyethyl) oleamide (LOA)
PP	Brodifacoum
	Bromine cyanide
	Bromoacelone
	Bromoallylene
	Bromobenzene
	ortho-Bromobenzyl cyanide
	Bromocyanide
	Bromoform
PP	Bromophos-ethyl
	3-Bromopropene
	Bromoxynil
	Butanedione
	2-Butenal, stabilized
	Butyl benzyl phthalate
	<i>N-tert</i> -butyl- <i>N</i> -cyclopropyl-6-methylthio-1,3,5-triazine-2,4-diamine
	2,4-Di- <i>tert</i> -butylphenol
PP	2, 6-Di- <i>tert</i> -Butylphenol
	para-tertiary-butyltoluene
PP	Cadmium compounds
	Cadmium sulphide
	Calcium arsenate
	Calcium arsenate and calcium arsenite, mixtures, solid
	Calcium cyanide
PP	Camphechlor
	Carbaryl
	Carbendazim
	Carbofuran
	Carbon tetrabromide
	Carbon tetrachloride
PP	Carbophenothion
	Cartap hydrochloride
PP	Chlordane
	Chlorfenvinphos
PP	Chlorinated paraffins (C-10 - C-13)
PP	Chlorinated paraffins (C14–C17), with more than 1% shorter chain length
	Chlorine
	Chlorine cyanide, inhibited
	Chlormephos
	Chloroacetone, stabilized
	1-Chloro-2,3-Epoxypropane
	2-Chloro-6-nitrotoluene
	4-Chloro-2-nitrotoluene
	Chloro-ortho-nitrotoluene
	2-Chloro-5-trifluoromethylnitrobenzene
	para-Chlorobenzyl chloride, liquid or solid
	Chlorodinitrobenzenes, liquid or solid
	1-Chloroheptane

LIST OF MARINE POLLUTANTS—Continued

S.M.P. (1)	Marine pollutant (2)
	1-Chlorohexane
	Chloronitroanilines
	Chloronitrotoluenes, liquid
	Chloronitrotoluenes, solid
	1-Chlorooctane
PP	Chlorophenolates, liquid
PP	Chlorophenolates, solid
	Chlorophenyltrichlorosilane
	Chloropicrin
	alpha-Chloropropylene
	Chlorotoluenes (meta-;para-)
PP	Chlorpyrifos
PP	Chlorthiophos
	Cocculus
	Coconitrile
	Copper acetoarsenite
	Copper arsenite
	Copper chloride
PP	Copper chloride solution
PP	Copper cyanide
PP	Copper metal powder
PP	Copper sulphate, anhydrous, hydrates
	Coumachlor
PP	Coumaphos
PP	Cresyl diphenyl phosphate
	Crotonaldehyde, stabilized
	Crotonic aldehyde, stabilized
	Crotoxyphos
	Cupric arsenite
PP	Cupric chloride
PP	Cupric cyanide
PP	Cupric sulfate
	Cupriethylenediamine solution
PP	Cuprous chloride
	Cyanide mixtures
	Cyanide solutions
	Cyanides, inorganic, n.o.s.
	Cyanogen bromide
	Cyanogen chloride, inhibited
	Cyanogen chloride, stabilized
	Cyanophos
PP	1,5,9-Cyclododecatriene
	Cyhexatin
	Cymenes (o-;m-;p-)
	Cypermethrin
	Decyl acrylate
PP	DDT
	Decyloxytetrahydrothiophene dioxide
	DEF
	Desmedipham
	Di-allate
	Di-n-Butyl phthalate
PP	Dialifos
	4,4'-Diaminodiphenylmethane
PP	Diazinon
	1,3-Dibromobenzene
PP	Dichlofenthion
	Dichloroanilines
	1,3-Dichlorobenzene
	1,4-Dichlorobenzene
	Dichlorobenzene (meta-; para-)
	2,2-Dichlorodiethyl ether
	Dichlorodimethyl ether, symmetrical
	Di-(2-chloroethyl) ether
	1,1-Dichloroethylene, inhibited
	1,6-Dichlorohexane
	Dichlorophenyltrichlorosilane
	Dichlorvos
PP	Diclofop-methyl
PP	Dicrotophos
PP	Dieldrin

§ 172.101

49 CFR Ch. I (10–1–10 Edition)

LIST OF MARINE POLLUTANTS—Continued

LIST OF MARINE POLLUTANTS—Continued

S.M.P. (1)	Marine pollutant (2)
	Diisopropylbenzenes
	Diisopropyl-naphthalenes, mixed isomers
PP	Dimethoate
PP	N,N-Dimethyldodecylamine
	Dimethylhydrazine, symmetrical
	Dimethylhydrazine, unsymmetrical
	Dinitro-o-cresol, <i>solid</i>
	Dinitro-o-cresol, <i>solution</i>
	Dinitrochlorobenzenes, liquid or solid
	Dinitrophenol, <i>dry or wetted with less than 15 per cent water, by mass</i>
	Dinitrophenol solutions
	Dinitrophenol, <i>wetted with not less than 15 per cent water, by mass</i>
	Dinitrophenolates <i>alkali metals, dry or wetted with less than 15 per cent water, by mass</i>
	Dinitrophenolates, <i>wetted with not less than 15 per cent water, by mass</i>
	Dinobuton
	Dinoseb
	Dinoseb acetate
	Dioxacarb
	Dioxathion
	Dipentene
	Diphacinone
	Diphenyl
PP	Diphenylamine chloroarsine
PP	Diphenylchloroarsine, <i>solid or liquid</i>
	Disulfoton
	1,4-Di-tert-butylbenzene
	DNOC
	DNOC (pesticide)
PP	Dodecyl diphenyl oxide disulphonate
	Dodecyl hydroxypropyl sulfide
PP	1-Dodecylamine
	Dodecylphenol
	Drazoxolon
PP	Edifenphos
PP	Endosulfan
PP	Endrin
	Epibromohydrin
	Epichlorohydrin
PP	EPN
PP	Esfenvalerate
PP	Ethion
	Ethoprophos
	Ethyl fluid
	Ethyl mercaptan
	2-Ethylhexyl nitrate
	2-Ethyl-3-propylacrolein
	Ethyl tetraphosphate
	Ethyl-dichloroarsine
	Ethylene dibromide and methyl bromide mixtures, <i>liquid</i>
	2-Ethylhexaldehyde
PP	Fenamiphos
PP	Fenbutatin oxide
PP	Fenchlorazole-ethyl
PP	Fenitrothion
PP	Fenoxapro-ethyl
PP	Fenoxaprop-P-ethyl
PP	Fenpropathrin
	Fensulfothion
PP	Fenthion
PP	Fentin acetate
PP	Fentin hydroxide
	Ferric arsenate
	Ferric arsenite
	Ferrous arsenate
PP	Fonofos
	Formetanate

S.M.P. (1)	Marine pollutant (2)
PP	Furathiocarb (ISO)
PP	gamma-BHC
	Gasoline, leaded
PP	Heptachlor
	Heptenophos
	n-Heptaldehyde
	n-Heptylbenzene
	normal-Heptyl chloride
PP	Hexachlorobutadiene
PP	1,3-Hexachlorobutadiene
	Hexaethyl tetraphosphate <i>liquid</i>
	Hexaethyl tetraphosphate, <i>solid</i>
	normal-Hexyl chloride
	n-Hexylbenzene
	Hydrocyanic acid, anhydrous, stabilized, containing less than 3% water
	Hydrocyanic acid, anhydrous, stabilized, containing less than 3% water and absorbed in a porous inert material
	Hydrocyanic acid, aqueous solutions <i>not more than 20% hydrocyanic acid</i>
	Hydrogen cyanide solution in alcohol, <i>with not more than 45% hydrogen cyanide</i>
	Hydrogen cyanide, stabilized <i>with less than 3% water</i>
	Hydrogen cyanide, stabilized <i>with less than 3% water and absorbed in a porous inert material</i>
	Hydroxydimethylbenzenes, liquid or solid
	Ioxynil
	Isobenzan
	Isobutyl butyrate
	Isobutylbenzene
	Isodecyl acrylate
	Isodecyl diphenyl phosphate
	Isofenphos
	Isooctyl nitrate
	Isoprocab
	Isotetramethylbenzene
PP	Isoxathion
	Lead acetate
	Lead arsenates
	Lead arsenites
	Lead compounds, soluble, n.o.s.
	Lead cyanide
	Lead nitrate
	Lead perchlorate, <i>solid or solution</i>
	Lead tetraethyl
	Lead tetramethyl
PP	Lindane
	Linuron
	London Purple
	Magnesium arsenate
	Malathion
	Mancozeb (ISO)
	Maneb
	Maneb preparations <i>with not less than 60% maneb</i>
	Maneb preparation, stabilized against self-heating
	Maneb stabilized or Maneb preparations, stabilized <i>against self-heating</i>
	Manganese ethylene-1,2-bis dithiocarbamate
	Manganese ethylene-1,2-bis-dithiocarbamate, stabilized against self-heating
	Mecarbam
	Mephosfolan
	Mercaptodimethur
PP	Mercuric acetate
PP	Mercuric ammonium chloride
PP	Mercuric arsenate
PP	Mercuric benzoate
PP	Mercuric bisulphate
PP	Mercuric bromide

LIST OF MARINE POLLUTANTS—Continued

LIST OF MARINE POLLUTANTS—Continued

S.M.P. (1)	Marine pollutant (2)
PP	Mercuric chloride
PP	Mercuric cyanide
PP	Mercuric gluconate
	Mercuric iodide
PP	Mercuric nitrate
PP	Mercuric oleate
PP	Mercuric oxide
PP	Mercuric oxycyanide, desensitized
PP	Mercuric potassium cyanide
PP	Mercuric Sulphate
PP	Mercuric thiocyanate
PP	Mercuriol
PP	Mercurous acetate
PP	Mercurous bisulphate
PP	Mercurous bromide
PP	Mercurous chloride
PP	Mercurous nitrate
PP	Mercurous salicylate
PP	Mercurous sulphate
PP	Mercury acetates
PP	Mercury ammonium chloride
PP	Mercury based pesticide, liquid, flammable, toxic
PP	Mercury based pesticides, liquid, toxic, flammable
PP	Mercury based pesticides, liquid, toxic
PP	Mercury based pesticides, solid, toxic
PP	Mercury benzoate
PP	Mercury bichloride
PP	Mercury bisulphates
PP	Mercury bromides
PP	Mercury compounds, liquid, n.o.s.
PP	Mercury compounds, solid, n.o.s.
PP	Mercury cyanide
PP	Mercury gluconate
PP	Mercury (I) (mercurous) compounds (pesticides)
PP	Mercury (II) (mercuric) compounds (pesticides)
	Mercury iodide
PP	Mercury nucleate
PP	Mercury oleate
PP	Mercury oxide
PP	Mercury oxycyanide, desensitized
PP	Mercury potassium cyanide
PP	Mercury potassium iodide
PP	Mercury salicylate
PP	Mercury sulfates
PP	Mercury thiocyanate
	Metam-sodium
	Methamidophos
	Methanethiol
	Methodathion
	Methomyl
	ortho-Methoxyaniline
	Methyl bromide and ethylene dibromide mixtures, liquid
	Methyl mercaptan
	3-Methylacroleine, stabilized
	Methylchlorobenzenes
	Methylnitrophenols
	3-Methylpyradine
	Methyltrithion
	Methylvinylbenzenes, inhibited
PP	Mevinphos
	Mexacarbate
	Mirex
	Monocrotophos
	Motor fuel anti-knock mixtures
	Motor fuel anti-knock mixtures or compounds
	Nabam
	Naled
PP	Nickel carbonyl
PP	Nickel cyanide
PP	Nickel tetracarbonyl

S.M.P. (1)	Marine pollutant (2)
	3-Nitro-4-chlorobenzotrifluoride
	Nitrobenzene
	Nitrobenzotrifluorides, liquid or solid
	Nonylphenol
	normal-Octaldehyde
	Oleylamine
PP	Organotin compounds, liquid, n.o.s.
PP	Organotin compounds (pesticides)
PP	Organotin compounds, solid, n.o.s.
PP	Organotin pesticides, liquid, flammable, toxic, n.o.s., <i>flash point less than 23deg C</i>
PP	Organotin pesticides, liquid, toxic, flammable, n.o.s.
PP	Organotin pesticides, liquid, toxic, n.o.s.
PP	Organotin pesticides, solid, toxic, n.o.s.
	Orthoarsenic acid
PP	Osmium tetroxide
	Oxamyl
	Oxydisulfoton
	Paraoxon
PP	Parathion
PP	Parathion-methyl
PP	PCBs.
	Pentachloroethane
PP	Pentachlorophenol
	Pentalin
	n-Pentylbenzene
	Perchloroethylene
	Perchloromethylmercaptan
	Petrol, leaded
PP	Phenarsazine chloride
	d-Phenothrin
PP	Phenthoate
	1-Phenylbutane
	2-Phenylbutane
	Phenylcyclohexane
PP	Phenylmercuric acetate
PP	Phenylmercuric compounds, n.o.s.
PP	Phenylmercuric hydroxide
PP	Phenylmercuric nitrate
PP	Phorate
PP	Phosalone
	Phosmet
PP	Phosphamidon
PP	Phosphorus, white, molten
PP	Phosphorus, white or yellow dry or under water or in solution
PP	Phosphorus white, or yellow, molten
PP	Phosphorus, yellow, molten
	Pindone (and salts of)
	Pirimicarb
PP	Pirimiphos-ethyl
PP	Polychlorinated biphenyls
PP	Polyhalogenated biphenyls, liquid or Terphenyls liquid
PP	Polyhalogenated biphenyls, solid or Terphenyls, solid
PP	Potassium cuprocyanide
	Potassium cyanide, solid
	Potassium cyanide, solution
PP	Potassium cyanocuprate (I)
PP	Potassium cyanomercurate
PP	Potassium mercuric iodide
	Promecarb
	Propachlor
	Propaphos
	Propenal, inhibited
	Propoxur
	Prothoate
	Prussic acid, anhydrous, stabilized
	Prussic acid, anhydrous, stabilized, absorbed in a porous inert material

§ 172.102

49 CFR Ch. I (10–1–10 Edition)

LIST OF MARINE POLLUTANTS—Continued

LIST OF MARINE POLLUTANTS—Continued

S.M.P. (1)	Marine pollutant (2)
PP	Pyrazophos
	Quinalphos
PP	Quizalofop
PP	Quizalofop-p-ethyl
	Rotenone
	Salithion
PP	Silafluofen
	Silver arsenite
	Silver cyanide
	Silver orthoarsenite
PP	Sodium copper cyanide, solid
PP	Sodium copper cyanide solution
PP	Sodium cuprocyanide, solid
PP	Sodium cuprocyanide, solution
	Sodium cyanide, solid
	Sodium cyanide, solution
	Sodium dinitro-o-cresolate, dry or wetted with less than 15 per cent water, by mass
	Sodium dinitro-ortho-cresolate, wetted with not less than 15 per cent water, by mass
PP	Sodium pentachlorophenate
	Strychnine or Strychnine salts
	Sulfotep
PP	Sulprofos
	Tallow nitrile
	Temephos
	TEPP
PP	Terbufos
	Tetrabromoethane
	Tetrabromomethane
	1,1,2,2-Tetrachloroethane
	Tetrachloroethylene
	Tetrachloromethane
	Tetraethyl dithiopyrophosphate
PP	Tetraethyl lead, liquid
	Tetramethrin
	Tetramethyllead
	Thallium chlorate
	Thallium compounds, n.o.s.
	Thallium compounds (pesticides)
	Thallium nitrate
	Thallium sulfate
	Thallos chlorate
	Thiocarbonyl tetrachloride
	Triaryl phosphates, isopropylated
PP	Triaryl phosphates, n.o.s.
	Triazophos
	Tribromomethane
PP	Tributyltin compounds
	Trichlorfon
PP	1,2,3-Trichlorobenzene
	Trichlorobenzenes, liquid
	Trichlorobutene
	Trichlorobutylene
	Trichloromethane sulphuryl chloride
	Trichloromethyl sulphochloride
	Trichloronat
	Tricresyl phosphate (less than 1% ortho-isomer)
PP	Tricresyl phosphate, not less than 1% ortho-isomer but not more than 3% orthoisomer
PP	Tricresyl phosphate with more than 3 per cent ortho isomer
	Triethylbenzene
	Triisopropylated phenyl phosphates
	Trimethylene dichloride
PP	Triphenylphosphate
	Triphenyl phosphate/tert-butylated triphenyl phosphates mixtures containing 5% to 10% triphenyl phosphates
PP	Triphenyl phosphate/tert-butylated triphenyl phosphates mixtures containing 10% to 48% triphenyl phosphates

S.M.P. (1)	Marine pollutant (2)
PP	Triphenyltin compounds
	Tritolyl phosphate (less than 1% ortho-isomer)
PP	Tritolyl phosphate (not less than 1% ortho-isomer)
	Trixylenyl phosphate
	Vinylidene chloride, stabilized
	Warfarin (and salts of)
PP	White phosphorus, dry
PP	White phosphorus, wet
	White spirit, low (15-20%) aromatic
PP	Yellow phosphorus, dry
PP	Yellow phosphorus, wet
	Zinc bromide
	Zinc cyanide

[Amdt. 172-173, 55 FR 52474, Dec. 21, 1990]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §172.101, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 172.102 Special provisions.

(a) *General.* When column 7 of the §172.101 table refers to a special provision for a hazardous material, the meaning and requirements of that provision are as set forth in this section. When a special provision specifies packaging or packaging requirements—

(1) The special provision is in addition to the standard requirements for all packagings prescribed in §173.24 of this subchapter and any other applicable packaging requirements in subparts A and B of part 173 of this subchapter; and

(2) To the extent a special provision imposes limitations or additional requirements on the packaging provisions set forth in column 8 of the §172.101 table, packagings must conform to the requirements of the special provision.

(b) *Description of codes for special provisions.* Special provisions contain packaging provisions, prohibitions, exceptions from requirements for particular quantities or forms of materials and requirements or prohibitions applicable to specific modes of transportation, as follows:

(1) A code consisting only of numbers (for example, “11”) is multi-modal in application and may apply to bulk and non-bulk packagings.

(2) A code containing the letter "A" refers to a special provision which applies only to transportation by aircraft.

(3) A code containing the letter "B" refers to a special provision that applies only to bulk packaging requirements. Unless otherwise provided in this subchapter, these special provisions do not apply to UN, IM Specification portable tanks or IBCs.

(4) A code containing the letters "IB" or "IP" refers to a special provision that applies only to transportation in IBCs.

(5) A code containing the letter "N" refers to a special provision which applies only to non-bulk packaging requirements.

(6) A code containing the letter "R" refers to a special provision which applies only to transportation by rail.

(7) A code containing the letter "T" refers to a special provision which applies only to transportation in UN or IM Specification portable tanks.

(8) A code containing the letters "TP" refers to a portable tank special provision for UN or IM Specification portable tanks that is in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter.

(9) A code containing the letter "W" refers to a special provision that applies only to transportation by water.

(c) *Tables of special provisions.* The following tables list, and set forth the requirements of, the special provisions referred to in column 7 of the §172.101 table.

(1) *Numeric provisions.* These provisions are multi-modal and apply to bulk and non-bulk packagings:

Code/Special Provisions

- 1 This material is poisonous by inhalation (see §171.8 of this subchapter) in Hazard Zone A (see §173.116(a) or §173.133(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.
- 2 This material is poisonous by inhalation (see §171.8 of this subchapter) in Hazard Zone B (see §173.116(a) or §173.133(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.
- 3 This material is poisonous by inhalation (see §171.8 of this subchapter) in Hazard Zone C (see §173.116(a) of this subchapter),

and must be described as an inhalation hazard under the provisions of this subchapter.

- 4 This material is poisonous by inhalation (see §171.8 of this subchapter) in Hazard Zone D (see §173.116(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.
- 5 If this material meets the definition for a material poisonous by inhalation (see §171.8 of this subchapter), a shipping name must be selected which identifies the inhalation hazard, in Division 2.3 or Division 6.1, as appropriate.
- 6 This material is poisonous-by-inhalation and must be described as an inhalation hazard under the provisions of this subchapter.
- 8 A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies.
- 9 Packaging for certain PCBs for disposal and storage is prescribed by EPA in 40 CFR 761.60 and 761.65.
- 11 The hazardous material must be packaged as either a liquid or a solid, as appropriate, depending on its physical form at 55 °C (131 °F) at atmospheric pressure.
- 12 In concentrations greater than 40 percent, this material has strong oxidizing properties and is capable of starting fires in contact with combustible materials. If appropriate, a package containing this material must conform to the additional labeling requirements of §172.402 of this subchapter.
- 13 The words "Inhalation Hazard" shall be entered on each shipping paper in association with the shipping description, shall be marked on each non-bulk package in association with the proper shipping name and identification number, and shall be marked on two opposing sides of each bulk package. Size of marking on bulk package must conform to §172.302(b) of this subchapter. The requirements of §§172.203(m) and 172.505 of this subchapter do not apply.
- 14 Motor fuel antiknock mixtures are:
 - a. Mixtures of one or more organic lead mixtures (such as tetraethyl lead, triethylmethyl lead, diethyldimethyl lead, ethyltrimethyl lead, and tetramethyl lead) with one or more halogen compounds (such as ethylene dibromide and ethylene dichloride), hydrocarbon solvents or other equally efficient stabilizers; or
 - b. tetraethyl lead.
- 15 This entry applies to "Chemical kits" and "First aid kits" containing one or more compatible items of hazardous materials in boxes, cases, etc. that, for example,

- are used for medical, analytical, diagnostic, testing, or repair purposes. For transportation by aircraft, materials forbidden for transportation by passenger aircraft or cargo aircraft may not be included in the kits. Chemical kits and first aid kits are excepted from the specification packaging requirements of this subchapter when packaged in combination packagings. Chemical kits and first aid kits are also excepted from the labeling and placarding requirements of this subchapter, except when offered for transportation or transported by air. Chemical and first aid kits may be transported in accordance with the consumer commodity and ORM exceptions in §173.156, provided they meet all required conditions. Kits that are carried on board transport vehicles for first aid or operating purposes are not subject to the requirements of this subchapter.
- 16 This description applies to smokeless powder and other solid propellants that are used as powder for small arms and have been classed as Division 1.3 and 4.1 in accordance with §173.56 of this subchapter.
- 18 This description is authorized only for fire extinguishers listed in §173.309(b) of this subchapter meeting the following conditions:
- Each fire extinguisher may only have extinguishing contents that are nonflammable, non-poisonous, non-corrosive and commercially free from corroding components.
 - Each fire extinguisher must be charged with a nonflammable, non-poisonous, dry gas that has a dew-point at or below minus 46.7 °C (minus 52 °F) at 101 kPa (1 atmosphere) and is free of corroding components, to not more than the service pressure of the cylinder.
 - A fire extinguisher may not contain more than 30% carbon dioxide by volume or any other corrosive extinguishing agent.
 - Each fire extinguisher must be protected externally by suitable corrosion-resisting coating.
- 19 For domestic transportation only, the identification number "UN1075" may be used in place of the identification number specified in column (4) of the §172.101 table. The identification number used must be consistent on package markings, shipping papers and emergency response information.
- 21 This material must be stabilized by appropriate means (e.g., addition of chemical inhibitor, purging to remove oxygen) to prevent dangerous polymerization (see §173.21(f) of this subchapter).
- 22 If the hazardous material is in dispersion in organic liquid, the organic liquid must have a flash point above 50 °C (122 °F).
- 23 This material may be transported under the provisions of Division 4.1 only if it is so packed that the percentage of diluent will not fall below that stated in the shipping description at any time during transport. Quantities of not more than 500 g per package with not less than 10 percent water by mass may also be classed in Division 4.1, provided a negative test result is obtained when tested in accordance with test series 6(c) of the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter).
- 24 Alcoholic beverages containing more than 70 percent alcohol by volume must be transported as materials in Packing Group II. Alcoholic beverages containing more than 24 percent but not more than 70 percent alcohol by volume must be transported as materials in Packing Group III.
- 26 This entry does not include ammonium permanganate, the transport of which is prohibited except when approved by the Associate Administrator.
- 28 The dihydrated sodium salt of dichloroisocyanuric acid is not subject to the requirements of this subchapter.
- 29 For transportation by motor vehicle, rail car or vessel, production runs (exceptions for prototypes can be found in §173.185(e)) of not more than 100 lithium cells or batteries are excepted from the testing requirements of §173.185(a)(1) if—
- For a lithium metal cell or battery, the lithium content is not more than 1.0 g per cell and the aggregate lithium content is not more than 2.0 g per battery, and, for a lithium-ion cell or battery, the equivalent lithium content is not more than 1.5 g per cell and the aggregate equivalent lithium content is not more than 8 g per battery;
 - The cells and batteries are transported in an outer packaging that is a metal, plastic or plywood drum or metal, plastic or wooden box that meets the criteria for Packing Group I packagings; and
 - Each cell and battery is individually packed in an inner packaging inside an outer packaging and is surrounded by cushioning material that is non-combustible, and non-conductive.
- 30 Sulfur is not subject to the requirements of this subchapter if transported in a non-bulk packaging or if formed to a specific shape (for example, prills, granules, pellets, pastilles, or flakes). A bulk packaging containing sulfur is not subject to the placarding requirements of subpart F of this part, if it is marked with the appropriate identification number as required by subpart D of this part. Molten sulfur must be marked as required by §172.325 of this subchapter.
- 31 Materials which have undergone sufficient heat treatment to render them non-hazardous are not subject to the requirements of this subchapter.
- 32 Polymeric beads and molding compounds may be made from polystyrene,

- poly(methyl methacrylate) or other polymeric material.
- 33 Ammonium nitrites and mixtures of an inorganic nitrite with an ammonium salt are prohibited.
- 34 The commercial grade of calcium nitrate fertilizer, when consisting mainly of a double salt (calcium nitrate and ammonium nitrate) containing not more than 10 percent ammonium nitrate and at least 12 percent water of crystallization, is not subject to the requirements of this subchapter.
- 35 Antimony sulphides and oxides which do not contain more than 0.5 percent of arsenic calculated on the total mass do not meet the definition of Division 6.1.
- 37 Unless it can be demonstrated by testing that the sensitivity of the substance in its frozen state is no greater than in its liquid state, the substance must remain liquid during normal transport conditions. It must not freeze at temperatures above -15°C (5°F).
- 38 If this material shows a violent effect in laboratory tests involving heating under confinement, the labeling requirements of Special Provision 53 apply, and the material must be packaged in accordance with packing method OP6 in §173.225 of this subchapter. If the SADT of the technically pure substance is higher than 75°C , the technically pure substance and formulations derived from it are not self-reactive materials and, if not meeting any other hazard class, are not subject to the requirements of this subchapter.
- 39 This substance may be carried under provisions other than those of Class 1 only if it is so packed that the percentage of water will not fall below that stated at any time during transport. When phlegmatized with water and inorganic inert material, the content of urea nitrate must not exceed 75 percent by mass and the mixture should not be capable of being detonated by test 1(a)(i) or test 1(a)(ii) in the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter).
- 40 Polyester resin kits consist of two components: a base material (Class 3, Packing Group II or III) and an activator (organic peroxide), each separately packed in an inner packaging. The organic peroxide must be type D, E, or F, not requiring temperature control, and be limited to a quantity of 125 mL (4.22 ounces) per inner packaging if liquid, and 500 g (1 pound) if solid. The components may be placed in the same outer packaging provided they will not interact dangerously in the event of leakage. Packing group will be II or III, according to the criteria for Class 3, applied to the base material.
- 41 This material at the Packing Group II hazard criteria level may be transported in Large Packagings.
- 43 The membrane filters, including paper separators and coating or backing materials, that are present in transport, must not be able to propagate a detonation as tested by one of the tests described in the UN Manual of Tests and Criteria, Part I, Test series 1(a) (IBR, see §171.7 of this subchapter). On the basis of the results of suitable burning rate tests, and taking into account the standard tests in the UN Manual of Tests and Criteria, Part III, subsection 33.2.1 (IBR, see §171.7 of this subchapter), nitrocellulose membrane filters in the form in which they are to be transported that do not meet the criteria for a Division 4.1 material are not subject to the requirements of this subchapter. Packagings must be so constructed that explosion is not possible by reason of increased internal pressure. Nitrocellulose membrane filters covered by this entry, each with a mass not exceeding 0.5 g, are not subject to the requirements of this subchapter when contained individually in an article or a sealed packet.
- 44 The formulation must be prepared so that it remains homogenous and does not separate during transport. Formulations with low nitrocellulose contents and neither showing dangerous properties when tested for their ability to detonate, deflagrate or explode when heated under defined confinement by the appropriate test methods and criteria in the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter), nor classed as a Division 4.1 (flammable solid) when tested in accordance with the procedures specified in §173.124 of this subchapter (chips, if necessary, crushed and sieved to a particle size of less than 1.25 mm), are not subject to the requirements of this subchapter.
- 45 Temperature should be maintained between 18°C (64.4°F) and 40°C (104°F). Tanks containing solidified methacrylic acid must not be reheated during transport.
- 46 This material must be packed in accordance with packing method OP6 (see §173.225 of this subchapter). During transport, it must be protected from direct sunshine and stored (or kept) in a cool and well-ventilated place, away from all sources of heat.
- 47 Mixtures of solids that are not subject to this subchapter and flammable liquids may be transported under this entry without first applying the classification criteria of Division 4.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Except when the liquids are fully absorbed in solid material contained in sealed bags, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. Small inner packagings consisting of

- sealed packets and articles containing less than 10 mL of a Class 3 liquid in Packing Group II or III absorbed onto a solid material are not subject to this subchapter provided there is no free liquid in the packet or article.
- 48 Mixtures of solids which are not subject to this subchapter and toxic liquids may be transported under this entry without first applying the classification criteria of Division 6.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. This entry may not be used for solids containing a Packing Group I liquid.
- 49 Mixtures of solids which are not subject to this subchapter and corrosive liquids may be transported under this entry without first applying the classification criteria of Class 8, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level.
- 50 Cases, cartridge, empty with primer which are made of metallic or plastic casings and meeting the classification criteria of Division 1.4 are not regulated for domestic transportation.
- 51 This description applies to items previously described as "Toy propellant devices, Class C" and includes reloadable kits. Model rocket motors containing 30 grams or less propellant are classed as Division 1.4S and items containing more than 30 grams of propellant but not more than 62.5 grams of propellant are classed as Division 1.4C.
- 52 This entry may only be used for substances that do not exhibit explosive properties of Class 1 (explosive) when tested in accordance with Test Series 1 and 2 of Class 1 (explosive) in the UN Manual of Tests and Criteria, Part I (incorporated by reference; see §171.7 of this subchapter).
- 53 Packages of these materials must bear the subsidiary risk label, "EXPLOSIVE", and the subsidiary hazard class/division must be entered in parentheses immediately following the primary hazard class in the shipping description, unless otherwise provided in this subchapter or through an approval issued by the Associate Administrator, or the competent authority of the country of origin. A copy of the approval shall accompany the shipping papers.
- 54 Maneb or maneb preparations not meeting the definition of Division 4.3 or any other hazard class are not subject to the requirements of this subchapter when transported by motor vehicle, rail car, or aircraft.
- 55 This device must be approved in accordance with §173.56 of this subchapter by the Associate Administrator.
- 56 A means to interrupt and prevent detonation of the detonator from initiating the detonating cord must be installed between each electric detonator and the detonating cord ends of the jet perforating guns before the charged jet perforating guns are offered for transportation.
- 57 Maneb or Maneb preparations stabilized against self-heating need not be classified in Division 4.2 when it can be demonstrated by testing that a volume of 1 m³ of substance does not self-ignite and that the temperature at the center of the sample does not exceed 200 °C, when the sample is maintained at a temperature of not less than 75 °C ± 2 °C for a period of 24 hours, in accordance with procedures set forth for testing self-heating materials in the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter).
- 58 Aqueous solutions of Division 5.1 inorganic solid nitrate substances are considered as not meeting the criteria of Division 5.1 if the concentration of the substances in solution at the minimum temperature encountered in transport is not greater than 80% of the saturation limit.
- 59 Ferrocium, stabilized against corrosion, with a minimum iron content of 10 percent is not subject to the requirements of this subchapter.
- 61 A chemical oxygen generator is spent if its means of ignition and all or a part of its chemical contents have been expended.
- 62 Oxygen generators (see §171.8 of this subchapter) are not authorized for transportation under this entry.
- 64 The group of alkali metals includes lithium, sodium, potassium, rubidium, and caesium.
- 65 The group of alkaline earth metals includes magnesium, calcium, strontium, and barium.
- 66 Formulations of these substances containing not less than 30 percent non-volatile, non-flammable phlegmatizer are not subject to this subchapter.
- 70 Black powder that has been classed in accordance with the requirements of §173.56 of this subchapter may be reclassified and offered for domestic transportation as a Division 4.1 material if it is offered for transportation and transported in accordance with the limitations and packaging requirements of §173.170 of this subchapter.
- 74 During transport, this material must be protected from direct sunshine and stored or kept in a cool and well-ventilated place, away from all sources of heat.
- 77 Mixtures containing not more than 23.5% oxygen by volume may be transported under this entry when no other oxidizing

- gases are present. A Division 5.1 subsidiary risk label is not required if this special provision applies.
- 78 This entry may not be used to describe compressed air which contains more than 23.5 percent oxygen. An oxidizer label is not required for any oxygen concentration of 23.5 percent or less.
- 79 This entry may not be used for mixtures that meet the definition for oxidizing gas.
- 81 Polychlorinated biphenyl items, as defined in 40 CFR 761.3, for which specification packagings are impractical, may be packaged in non-specification packagings meeting the general packaging requirements of subparts A and B of part 173 of this subchapter. Alternatively, the item itself may be used as a packaging if it meets the general packaging requirements of subparts A and B of part 173 of this subchapter.
- 102 The ends of the detonating cord must be tied fast so that the explosive cannot escape. The articles may be transported as in Division 1.4 Compatibility Group D (1.4D) if all of the conditions specified in §173.63(a) of this subchapter are met.
- 103 Detonators which will not mass detonate and undergo only limited propagation in the shipping package may be assigned to 1.4B classification code. Mass detonate means that more than 90 percent of the devices tested in a package explode practically simultaneously. Limited propagation means that if one detonator near the center of a shipping package is exploded, the aggregate weight of explosives, excluding ignition and delay charges, in this and all additional detonators in the outside packaging that explode may not exceed 25 grams.
- 105 The word "Agents" may be used instead of "Explosives" when approved by the Associate Administrator.
- 106 The recognized name of the particular explosive may be specified in addition to the type.
- 107 The classification of the substance is expected to vary especially with the particle size and packaging but the border lines have not been experimentally determined; appropriate classifications should be verified following the test procedures in §§173.57 and 173.58 of this subchapter.
- 108 Fireworks must be so constructed and packaged that loose pyrotechnic composition will not be present in packages during transportation.
- 109 Rocket motors must be nonpropulsive in transportation unless approved in accordance with §173.56 of this subchapter. A rocket motor to be considered "nonpropulsive" must be capable of unrestrained burning and must not appreciably move in any direction when ignited by any means.
- 110 Fire extinguishers transported under UN1044 may include installed actuating cartridges (cartridges, power device of Division 1.4C or 1.4S), without changing the classification of Division 2.2, provided the aggregate quantity of deflagrating (propellant) explosives does not exceed 3.2 grams per extinguishing unit.
- 111 Explosive substances of Division 1.1 Compatibility Group A (1.1A) are forbidden for transportation if dry or not desensitized, unless incorporated in a device.
- 113 The sample must be given a tentative approval by an agency or laboratory in accordance with §173.56 of this subchapter.
- 114 Jet perforating guns, charged, oil well, without detonator may be reclassified to Division 1.4 Compatibility Group D (1.4D) if the following conditions are met:
- The total weight of the explosive contents of the shaped charges assembled in the guns does not exceed 90.5 kg (200 pounds) per vehicle; and
 - The guns are packaged in accordance with Packing Method US 1 as specified in §173.62 of this subchapter.
- 115 Boosters with detonator, detonator assemblies and boosters with detonators in which the total explosive charge per unit does not exceed 25 g, and which will not mass detonate and undergo only limited propagation in the shipping package may be assigned to 1.4B classification code. Mass detonate means more than 90 percent of the devices tested in a package explode practically simultaneously. Limited propagation means that if one booster near the center of the package is exploded, the aggregate weight of explosives, excluding ignition and delay charges, in this and all additional boosters in the outside packaging that explode may not exceed 25 g.
- 116 Fuzes, detonating may be classed in Division 1.4 if the fuzes do not contain more than 25 g of explosive per fuze and are made and packaged so that they will not cause functioning of other fuzes, explosives or other explosive devices if one of the fuzes detonates in a shipping packaging or in adjacent packages.
- 117 If shipment of the explosive substance is to take place at a time that freezing weather is anticipated, the water contained in the explosive substance must be mixed with denatured alcohol so that freezing will not occur.
- 118 This substance may not be transported under the provisions of Division 4.1 unless specifically authorized by the Associate Administrator.
- 119 This substance, when in quantities of not more than 11.5 kg (25.3 pounds), with not less than 10 percent water, by mass, also may be classed as Division 4.1, provided a negative test result is obtained when tested in accordance with test series 6(c) of the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter).

- 120 The phlegmatized substance must be significantly less sensitive than dry PETN.
- 121 This substance, when containing less alcohol, water or phlegmatizer than specified, may not be transported unless approved by the Associate Administrator.
- 123 Any explosives, blasting, type C containing chlorates must be segregated from explosives containing ammonium nitrate or other ammonium salts.
- 125 Lactose or glucose or similar materials may be used as a phlegmatizer provided that the substance contains not less than 90%, by mass, of phlegmatizer. These mixtures may be classified in Division 4.1 when tested in accordance with test series 6(c) of the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter) and approved by the Associate Administrator. Testing must be conducted on at least three packages as prepared for transport. Mixtures containing at least 98%, by mass, of phlegmatizer are not subject to the requirements of this subchapter. Packages containing mixtures with not less than 90% by mass, of phlegmatizer need not bear a POISON subsidiary risk label.
- 127 Mixtures containing oxidizing and organic materials transported under this entry may not meet the definition and criteria of a Class 1 material. (See §173.50 of this subchapter.)
- 128 Regardless of the provisions of §172.101(c)(12), aluminum smelting by-products and aluminum remelting by-products described under this entry, meeting the definition of Class 8, Packing Group II and III may be classed as a Division 4.3 material and transported under this entry. The presence of a Class 8 hazard must be communicated as required by this Part for subsidiary hazards.
- 129 These materials may not be classified and transported unless authorized by the Associate Administrator on the basis of results from Series 2 Test and a Series 6(c) Test from the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter) on packages as prepared for transport. The packing group assignment and packaging must be approved by the Associate Administrator for Hazardous Materials Safety on the basis of the criteria in §173.21 of this subchapter and the package type used for the Series 6(c) test.
- 130 Dry batteries not specifically covered by another entry in the §172.101 Table must be described using this entry. Batteries described as "Batteries, dry, sealed, n.o.s." are hermetically sealed and generally utilize metals (other than lead) and/or carbon as electrodes. These batteries are typically used for portable power applications. The rechargeable (and some non-rechargeable) types have gelled alkaline electrolytes (rather than acidic) making it difficult for them to generate hydrogen or oxygen when overcharged and therefore, differentiating them from non-spillable batteries. "Batteries, dry, sealed, n.o.s." are not subject to any other requirements of this subchapter except for the following:
- (1) Incident reporting requirements. For transportation by aircraft, a telephone report in accordance with §171.15(a) is required if a fire, violent rupture, explosion or dangerous evolution of heat (*i.e.*, an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a dry battery. For all modes of transportation, a written report submitted, retained, and updated in accordance with §171.16 is required if a fire, violent rupture, explosion or dangerous evolution of heat occurs as a direct result of a dry battery or battery-powered device;
 - (2) Batteries and battery-powered device(s) containing batteries must be prepared and packaged for transport in a manner to prevent:
 - (i) A dangerous evolution of heat;
 - (ii) Short circuits, including but not limited to the following methods:
 - (a) Packaging each battery or each battery-powered device when practicable, in fully enclosed inner packagings made of non-conductive material;
 - (b) Separating or packaging batteries in a manner to prevent contact with other batteries, devices or conductive materials (*e.g.*, metal) in the packagings; or
 - (c) Ensuring exposed terminals or connectors are protected with non-conductive caps, non-conductive tape, or by other appropriate means; and
 - (iii) Damage to terminals. If not impact resistant, the outer packaging should not be used as the sole means of protecting the battery terminals from damage or short circuiting. Batteries must be securely cushioned and packed to prevent shifting which could loosen terminal caps or reorient the terminals to produce short circuits. Batteries contained in devices must be securely installed. Terminal protection methods include but are not limited to the following:
 - (a) Securely attaching covers of sufficient strength to protect the terminals;
 - (b) Packaging the battery in a rigid plastic packaging; or
 - (c) Constructing the battery with terminals that are recessed or otherwise protected so that the terminals will not be subjected to damage if the package is dropped.
 - (3) When transported by aircraft, for a battery whose voltage (electrical potential) exceeds 9 volts:
 - (i) When contained in a device, the device must be packaged in a manner that prevents unintentional activation or must have an independent means of preventing unintentional activation (*e.g.*, packaging restricts

access to activation switch, switch caps or locks, recessed switches, trigger locks, temperature sensitive circuit breakers, etc.); and

(ii) An indication of compliance with this special provision must be provided by marking each package with the words "not restricted" or by including the words "not restricted" on a transport document such as an air waybill accompanying the shipment.

131 This material may not be offered for transportation unless approved by the Associate Administrator.

132 This entry may only be used for uniform, ammonium nitrate based fertilizer mixtures, containing nitrogen, phosphate or potash, meeting the following criteria: (1) Contains not more than 70% ammonium nitrate and not more than 0.4% total combustible, organic material calculated as carbon or (2) Contains not more than 45% ammonium nitrate and unrestricted combustible material.

134 This entry only applies to vehicles, machinery and equipment powered by wet batteries, sodium batteries, or lithium batteries that are transported with these batteries installed. Examples of such items are electrically-powered cars, lawn mowers, wheelchairs, and other mobility aids. Self-propelled vehicles that also contain an internal combustion engine must be consigned under the entry "Vehicle, flammable gas powered" or "Vehicle, flammable liquid powered", as appropriate. Except as provided in Special Provision A101, vehicles, machinery and equipment powered by primary lithium batteries that are transported with these batteries installed are forbidden aboard passenger-carrying aircraft.

135 The entries "Vehicle, flammable gas powered" or "Vehicle, flammable liquid powered," as appropriate, must be used when internal combustion engines are installed in a vehicle. These entries include hybrid electric vehicles powered by both an internal combustion engine and batteries.

136 This entry only applies to machinery and apparatus containing hazardous materials as in integral element of the machinery or apparatus. It may not be used to describe machinery or apparatus for which a proper shipping name exists in the §172.101 Table. Except when approved by the Associate Administrator, machinery or apparatus may only contain hazardous materials for which exceptions are referenced in Column (8) of the §172.101 Table and are provided in part 173, subpart D, of this subchapter. Hazardous materials shipped under this entry are excepted from the labeling requirements of this subchapter unless offered for transportation or transported by aircraft and are not subject to the placarding requirements of part 172, subpart F, of this subchapter. Orientation markings as described in §172.312 (a)(2) are

required when liquid hazardous materials may escape due to incorrect orientation. The machinery or apparatus, if unpackaged, or the packaging in which it is contained shall be marked "Dangerous goods in machinery" or "Dangerous goods in apparatus", as appropriate, with the identification number UN3363. For transportation by aircraft, machinery or apparatus may not contain any material forbidden for transportation by passenger or cargo aircraft. The Associate Administrator may except from the requirements of this subchapter, equipment, machinery and apparatus provided:

- a. It is shown that it does not pose a significant risk in transportation;
- b. The quantities of hazardous materials do not exceed those specified in §173.4a of this subchapter; and
- c. The equipment, machinery or apparatus conforms with §173.222 of this subchapter.

137 Cotton, dry; flax, dry; sisal, dry; and tampico fiber, dry are not subject to the requirements of this subchapter when they are baled in accordance with ISO 8115, "Cotton Bales—Dimensions and Density" (IBR, see §171.7 of this subchapter) to a density of not less than 360 kg/m³ (22.1 lb/ft³) for cotton, 400 kg/m³ (24.97 lb/ft³) for flax, 620 kg/m³ (38.71 lb/ft³) for sisal and 360 kg/m³ (22.1 lb/ft³) for tampico fiber and transported in a freight container or closed transport vehicle.

138 Lead compounds which, when mixed in a ratio of 1:1,000 with 0.07 M (Molar concentration) hydrochloric acid and stirred for one hour at a temperature of 23°C ± 2°C, exhibit a solubility of 5% or less are considered insoluble and are not subject to the requirements of this subchapter unless they meet criteria as another hazard class or division.

139 Use of the "special arrangement" proper shipping names for international shipments must be made under an IAEA Certificate of Competent Authority issued by the Associate Administrator in accordance with the requirements in §173.471, §173.472, or §173.473 of this subchapter. Use of these proper shipping names for domestic shipments may be made only under a DOT special permit, as defined in, and in accordance with the requirements of subpart B of part 107 of this subchapter.

140 This material is regulated only when it meets the defining criteria for a hazardous substance or a marine pollutant. In addition, the column 5 reference is modified to read "III" on those occasions when this material is offered for transportation or transported by highway or rail.

141 A toxin obtained from a plant, animal, or bacterial source containing an infectious substance, or a toxin contained in an infectious substance, must be classed as

- Division 6.2, described as an infectious substance, and assigned to UN 2814 or UN 2900, as appropriate.
- 142 These hazardous materials may not be classified and transported unless authorized by the Associate Administrator. The Associate Administrator will base the authorization on results from Series 2 tests and a Series 6(c) test from the UN Manual of Tests and Criteria (IBR, see §171.7 of this subchapter) on packages as prepared for transport in accordance with the requirements of this subchapter.
- 144 If transported as a residue in an underground storage tank (UST), as defined in 40 CFR 280.12, that has been cleaned and purged or rendered inert according to the American Petroleum Institute (API) Standard 1604 (IBR, see §171.7 of this subchapter), then the tank and this material are not subject to any other requirements of this subchapter. However, sediments remaining in the tank that meet the definition for a hazardous material are subject to the applicable regulations of this subchapter.
- 145 This entry applies to formulations that neither detonate in the cavitated state nor deflagrate in laboratory testing, show no effect when heated under confinement, exhibit no explosive power, and are thermally stable (self-accelerating decomposition temperature (SADT) at 60 °C (140 °F) or higher for a 50 kg (110.2 lbs.) package). Formulations not meeting these criteria must be transported under the provisions applicable to the appropriate entry in the Organic Peroxide Table in §173.225 of this subchapter.
- 146 This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in §171.8 of this subchapter, or any hazard class, as defined in part 173 of this subchapter, if it is designated as environmentally hazardous by another Competent Authority. This provision may be used for both domestic and international shipments.
- 147 This entry applies to non-sensitized emulsions, suspensions, and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use. The mixture for emulsions typically has the following composition: 60–85% ammonium nitrate; 5–30% water; 2–8% fuel; 0.5–4% emulsifier or thickening agent; 0–10% soluble flame suppressants; and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate. The mixture for suspensions and gels typically has the following composition: 60–85% ammonium nitrate; 0–5% sodium or potassium perchlorate; 0–17% hexamine nitrate or monomethylamine nitrate; 5–30% water; 2–15% fuel; 0.5–4% thickening agent; 0–10% soluble flame suppressants; and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate. These substances must satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18 (IBR, see §171.7 of this subchapter), and may not be classified and transported unless approved by the Associate Administrator.
- 149 When transported as a limited quantity or a consumer commodity, the maximum net capacity specified in §173.150(b)(2) of this subchapter for inner packagings may be increased to 5 L (1.3 gallons).
- 150 This description may be used only for uniform mixtures of fertilizers containing ammonium nitrate as the main ingredient within the following composition limits:
- Not less than 90% ammonium nitrate with not more than 0.2% total combustible, organic material calculated as carbon, and with added matter, if any, that is inorganic and inert when in contact with ammonium nitrate; or
 - Less than 90% but more than 70% ammonium nitrate with other inorganic materials, or more than 80% but less than 90% ammonium nitrate mixed with calcium carbonate and/or dolomite and/or mineral calcium sulphate, and not more than 0.4% total combustible, organic material calculated as carbon; or
 - Ammonium nitrate-based fertilizers containing mixtures of ammonium nitrate and ammonium sulphate with more than 45% but less than 70% ammonium nitrate, and not more than 0.4% total combustible, organic material calculated as carbon such that the sum of the percentage of compositions of ammonium nitrate and ammonium sulphate exceeds 70%.
- 151 If this material meets the definition of a flammable liquid in §173.120 of this subchapter, a FLAMMABLE LIQUID label is also required and the basic description on the shipping paper must indicate the Class 3 subsidiary hazard.
- 155 Fish meal or fish scrap may not be transported if the temperature at the time of loading either exceeds 35 °C (95 °F), or exceeds 5 °C (41 °F) above the ambient temperature, whichever is higher.
- 156 Asbestos that is immersed or fixed in a natural or artificial binder material, such as cement, plastic, asphalt, resins or mineral ore, or contained in manufactured products is not subject to the requirements of this subchapter.
- 157 This entry includes hybrid electric vehicles powered by both an internal combustion engine and wet, sodium or lithium batteries installed. Vehicles containing an

- internal combustion engine must be con- signed under the entry "Vehicle, flam- mable gas powered" or "Vehicle, flam- mable liquid powered", as appropriate. Ex- cept as provided in Special Provision A101, vehicles powered by primary lithium bat- teries, that are transported with these bat- teries installed are forbidden aboard pas- senger-carrying aircraft.
- 159 This material must be protected from direct sunshine and kept in a cool, well- ventilated place away from sources of heat.
- 160 This entry applies to articles that are used as life-saving vehicle air bag infla- tors, air bag modules or seat-belt pretensioners containing Class 1 (explosive) materials or materials of other haz- ard classes. Air bag inflators and modules must be tested in accordance with Test series 6(c) of Part I of the UN Manual of Tests and Criteria (incorporated by refer- ence; see §171.7 of this subchapter), with no explosion of the device, no fragmenta- tion of device casing or pressure vessel, and no projection hazard or thermal effect that would significantly hinder fire-fight- ing or other emergency response efforts in the immediate vicinity. If the air bag infla- tor unit satisfactorily passes the series 6(c) test, it is not necessary to repeat the test on the air bag module.
- 161 For domestic transport, air bag infla- tors, air bag modules or seat belt pretensioners that meet the criteria for a Division 1.4G explosive must be trans- ported using the description, "Articles, py-rotechnic for technical purposes," UN0431.
- 162 This material may be transported under the provisions of Division 4.1 only if it is packed so that at no time during transport will the percentage of diluent fall below the percentage that is stated in the ship- ping description.
- 163 Substances must satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18 (IBR, see §171.7 of this subchapter).
- 164 Substances must not be transported under this entry unless approved by the Associate Administrator on the basis of the results of appropriate tests according to Part I of the UN Manual of Tests and Criteria (IBR, see §171.7 of this sub- chapter). The material must be packaged so that the percentage of diluent does not fall below that stated in the approval at any time during transportation.
- 165 These substances are susceptible to exothermic decomposition at elevated tem- peratures. Decomposition can be initiated by heat, moisture or by impurities (e.g., powdered metals (iron, manganese, cobalt, magnesium)). During the course of trans- portation, these substances must be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.
- 166 When transported in non-friable tablet form, calcium hypochlorite, dry, may be transported as a Packing Group III mate- rial.
- 167 These storage systems shall always be considered as containing hydrogen.
- 168 For lighters containing a Division 2.1 gas (see §171.8 of this subchapter), rep- resentative samples of each new lighter de- sign must be examined and successfully tested as specified in §173.308(b)(3). For cri- teria in determining what is a new lighter design, see §173.308(b)(1). For transpor- tation of new lighter design samples for ex- amination and testing, see §173.308(b)(2). The examination and testing of each light- er design must be performed by a person authorized by the Associate Administrator under the provisions of subpart E of part 107 of this chapter, as specified in §173.308(a)(4). For continued use of approv- als dated prior to January 1, 2012, see §173.308(b)(5).
- For non-pressurized lighters containing a Class 3 (flammable liquid) material, its de- sign, description, and packaging must be ap- proved by the Associate Administrator prior to being offered for transportation or trans- ported in commerce. In addition, a lighter design intended to contain a non-pressurized Class 3 material is excepted from the exam- ination and testing criteria specified in §173.308(b)(3). An unused lighter or a lighter that is cleaned of residue and purged of vap- ors is not subject to the requirements of this subchapter.
- 169 This entry applies to lighter refills (see §171.8 of this subchapter) that contain a Division 2.1 (flammable) gas but do not contain an ignition device. Lighter refills offered for transportation under this entry may not exceed 4 fluid ounces capacity (7.22 cubic inches) or contain more than 65 grams of fuel. A lighter refill exceeding 4 fluid ounces capacity (7.22 cubic inches) or containing more than 65 grams of fuel must be classed as a Division 2.1 material, described with the proper shipping name appropriate for the material, and packaged in the packaging specified in part 173 of this subchapter for the flammable gas con- tained therein. In addition, a container ex- ceeding 4 fluid ounces volumetric capacity (7.22 cubic inches) or containing more than 65 grams of fuel may not be connected or manifolded to a lighter or similar device and must also be described and packaged according to the fuel contained therein. For transportation by passenger-carrying aircraft, the net mass of lighter refills may not exceed 1 kg per package, and, for cargo-only aircraft, the net mass of lighter refills may not exceed 15 kg per package. See §173.306(h) of this subchapter.
- 170 Air must be eliminated from the vapor space by nitrogen or other means.

171 This entry may only be used when the material is transported in non-friable tablet form or for granular or powdered mixtures that have been shown to meet the PC III criteria in § 173.127.

172 This entry includes alcohol mixtures containing up to 5% petroleum products.

175 This substance must be stabilized when in concentrations of not more than 99%.

177 Gasoline, or, ethanol and gasoline mixtures, for use in internal combustion engines (e.g., in automobiles, stationary engines and other engines) must be assigned to Packing Group II regardless of variations in volatility.

188 *Small lithium cells and batteries.* Lithium cells or batteries, including cells or batteries packed with or contained in equipment, are not subject to any other requirements of this subchapter if they meet all of the following:

a. *Primary lithium batteries and cells.*

(1) Primary lithium batteries and cells are forbidden for transport aboard passenger-carrying aircraft. The outside of each package that contains primary (nonrechargeable) lithium batteries or cells must be marked "PRIMARY LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT" or "LITHIUM METAL BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT" on a background of contrasting color. The letters in the marking must be:

(i) At least 12 mm (0.5 inch) in height on packages having a gross weight of more than 30 kg (66 pounds); or

(ii) At least 6 mm (0.25 inch) on packages having a gross weight of 30 kg (66 pounds) or less, except that smaller font may be used as necessary to fit package dimensions; and

(2) The provisions of paragraph (a)(1) do not apply to packages that contain 5 kg (11 pounds) net weight or less of primary lithium batteries or cells that are contained in or packed with equipment and the package contains no more than the number of lithium batteries or cells necessary to power the piece of equipment;

b. For a lithium metal or lithium alloy cell, the lithium content is not more than 1.0 g. For a lithium-ion cell, the equivalent lithium content is not more than 1.5 g;

c. For a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2.0 g. For a lithium-ion battery, the aggregate equivalent lithium content is not more than 8 g;

d. Effective October 1, 2009, the cell or battery must be of a type proven to meet the requirements of each test in the UN Manual of Tests and Criteria (IBR; see § 171.7 of this subchapter);

e. Cells or batteries are separated or packaged in a manner to prevent short circuits and are packed in a strong outer packaging or are contained in equipment;

f. Effective October 1, 2008, except when contained in equipment, each package containing more than 24 lithium cells or 12 lithium batteries must be:

(1) Marked to indicate that it contains lithium batteries, and special procedures should be followed if the package is damaged;

(2) Accompanied by a document indicating that the package contains lithium batteries and special procedures should be followed if the package is damaged;

(3) Capable of withstanding a 1.2 meter drop test in any orientation without damage to cells or batteries contained in the package, without shifting of the contents that would allow short circuiting and without release of package contents; and

(4) Gross weight of the package may not exceed 30 kg (66 pounds). This requirement does not apply to lithium cells or batteries packed with equipment;

g. Electrical devices must conform to § 173.21;

h. For transportation by aircraft, a telephone report in accordance with § 171.15(a) is required if a fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a lithium battery. For all modes of transportation, a written report submitted, retained, and updated in accordance with § 171.16 is required if a fire, violent rupture, explosion or dangerous evolution of heat occurs as a direct result of a lithium battery or battery-powered device; and

i. Lithium batteries or cells are not authorized aboard an aircraft in checked or carry-on luggage except as provided in § 175.10.

189 *Medium lithium cells and batteries.* Effective October 1, 2008, when transported by motor vehicle or rail car, lithium cells or batteries, including cells or batteries packed with or contained in equipment, are not subject to any other requirements of this subchapter if they meet all of the following:

a. The lithium content anode of each cell, when fully charged, is not more than 5 grams.

b. The aggregate lithium content of the anode of each battery, when fully charged, is not more than 25 grams.

c. The cells or batteries are of a type proven to meet the requirements of each test in the UN Manual of Tests and Criteria (IBR; see § 171.7 of this subchapter). A cell or battery and equipment containing a cell or battery that was first transported prior to January 1, 2006 and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of

Tests and Criteria, Third revised edition, 1999, need not be retested.

d. Cells or batteries are separated or packaged in a manner to prevent short circuits and are packed in a strong outer packaging or are contained in equipment.

e. The outside of each package must be marked "LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD AIRCRAFT AND VESSEL" on a background of contrasting color, in letters:

(1) At least 12 mm (0.5 inch) in height on packages having a gross weight of more than 30 kg (66 pounds); or

(2) At least 6 mm (0.25 inch) on packages having a gross weight of 30 kg (66 pounds) or less, except that smaller font may be used as necessary to fit package dimensions.

f. Except when contained in equipment, each package containing more than 24 lithium cells or 12 lithium batteries must be:

(1) Marked to indicate that it contains lithium batteries, and special procedures should be followed if the package is damaged;

(2) Accompanied by a document indicating that the package contains lithium batteries and special procedures should be followed if the package is damaged;

(3) Capable of withstanding a 1.2 meter drop test in any orientation without damage to cells or batteries contained in the package, without shifting of the contents that would allow short circuiting and without release of package contents; and

(4) Gross weight of the package may not exceed 30 kg (66 pounds). This requirement does not apply to lithium cells or batteries packed with equipment.

g. Electrical devices must conform to §173.21 of this subchapter; and

h. A written report submitted, retained, and updated in accordance with §171.16 is required if a fire, violent rupture, explosion or dangerous evolution of heat (*i.e.*, an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a lithium battery or battery-powered device.

190 Until the effective date of the standards set forth in Special Provision 189, medium lithium cells or batteries, including cells or batteries packed with or contained in equipment, are not subject to any other requirements of this subchapter if they meet all of the following:

a. *Primary lithium batteries and cells.* (1) Primary lithium batteries and cells are forbidden for transport aboard passenger-carrying aircraft. The outside of each package that contains primary (nonrechargeable) lithium batteries or cells must be marked "PRIMARY LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT" or "LITHIUM METAL BAT-

TERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT" on a background of contrasting color. The letters in the marking must be:

(i) At least 12 mm (0.5 inch) in height on packages having a gross weight of more than 30 kg (66 pounds); or

(ii) At least 6 mm (0.25 inch) on packages having a gross weight of 30 kg (66 pounds) or less, except that smaller font may be used as necessary to fit package dimensions; and

(2) The provisions of paragraph (a)(1) do not apply to packages that contain 5 kg (11 pounds) net weight or less of primary lithium batteries or cells that are contained in or packed with equipment and the package contains no more than the number of lithium batteries or cells necessary to power the piece of equipment.

b. The lithium content of each cell, when fully charged, is not more than 5 grams.

c. The aggregate lithium content of each battery, when fully charged, is not more than 25 grams.

d. The cells or batteries are of a type proven to meet the requirements of each test in the UN Manual of Tests and Criteria (IBR; see §171.7 of this subchapter). A cell or battery and equipment containing a cell or battery that was first transported prior to January 1, 2006 and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of Tests and Criteria, Third Revised Edition, 1999, need not be retested.

e. Cells or batteries are separated so as to prevent short circuits and are packed in a strong outer packaging or are contained in equipment.

f. Electrical devices must conform to §173.21 of this subchapter.

198 Nitrocellulose solutions containing not more than 20% nitrocellulose may be transported as paint or printing ink, as applicable. See UN1210, UN1263, UN3066, UN3469, and UN3470.

237 "Batteries, dry, containing potassium hydroxide solid, *electric storage*" must be prepared and packaged in accordance with the requirements of §173.159(a), (b), and (c). For transportation by aircraft, the provisions of §173.159(b)(2) are applicable.

332 Magnesium nitrate hexahydrate is not subject to the requirements of this subchapter.

335 Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s." UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leakproof when used as bulk packaging.

§ 172.102

49 CFR Ch. I (10–1–10 Edition)

(2) "A" codes. These provisions apply only to transportation by aircraft:

Code/Special Provisions

- A1 Single packagings are not permitted on passenger aircraft.
- A2 Single packagings are not permitted on aircraft.
- A3 For combination packagings, if glass inner packagings (including ampoules) are used, they must be packed with absorbent material in tightly closed metal receptacles before packing in outer packagings.
- A4 Liquids having an inhalation toxicity of Packing Group I are not permitted on aircraft.
- A5 Solids having an inhalation toxicity of Packing Group I are not permitted on passenger aircraft and may not exceed a maximum net quantity per package of 15 kg (33 pounds) on cargo aircraft.
- A6 For combination packagings, if plastic inner packagings are used, they must be packed in tightly closed metal receptacles before packing in outer packagings.
- A7 Steel packagings must be corrosion-resistant or have protection against corrosion.
- A8 For combination packagings, if glass inner packagings (including ampoules) are used, they must be packed with cushioning material in tightly closed metal receptacles before packing in outer packagings.
- A9 For combination packagings, if plastic bags are used, they must be packed in tightly closed metal receptacles before packing in outer packagings.
- A10 When aluminum or aluminum alloy construction materials are used, they must be resistant to corrosion.
- A11 For combination packagings, when metal inner packagings are permitted, only specification cylinders constructed of metals which are compatible with the hazardous material may be used.
- A13 Bulk packagings are not authorized for transportation by aircraft.
- A14 This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with §173.306 of this subchapter when transported aboard an aircraft.
- A19 Combination packagings consisting of outer fiber drums or plywood drums, with inner plastic packagings, are not authorized for transportation by aircraft.
- A20 Plastic bags as inner receptacles of combination packagings are not authorized for transportation by aircraft.
- A29 Combination packagings consisting of outer expanded plastic boxes with inner plastic bags are not authorized for transportation by aircraft.
- A30 Ammonium permanganate is not authorized for transportation on aircraft.
- A34 Aerosols containing a corrosive liquid in Packing Group II charged with a gas are not permitted for transportation by aircraft.
- A35 This includes any material which is not covered by any of the other classes but which has an anesthetic, narcotic, noxious or other similar properties such that, in the event of spillage or leakage on an aircraft, extreme annoyance or discomfort could be caused to crew members so as to prevent the correct performance of assigned duties.
- A37 This entry applies only to a material meeting the definition in §171.8 of this subchapter for self-defense spray.
- A53 Refrigerating machines and refrigerating machine components are not subject to the requirements of this subchapter when containing less than 12 kg (26.4 pounds) of a non-flammable gas or when containing 12 L (3 gallons) or less of ammonia solution (UN2672) (see §173.307 of this subchapter).
- A54 Lithium batteries or lithium batteries contained or packed with equipment that exceed the maximum gross weight allowed by Column (9B) of the §172.101 Table may only be transported on cargo aircraft if approved by the Associate Administrator.
- A55 Prototype lithium batteries and cells that are packed with not more than 24 cells or 12 batteries per packaging that have not completed the test requirements in Sub-section 38.3 of the UN Manual of Tests and Criteria (incorporated by reference; see §171.7 of this subchapter) may be transported by cargo aircraft if approved by the Associate Administrator and provided the following requirements are met:
 - a. The cells and batteries must be transported in rigid outer packagings that conform to the requirements of Part 178 of this subchapter at the Packing Group I performance level; and
 - b. Each cell and battery must be protected against short circuiting, must be surrounded by cushioning material that is non-combustible and non-conductive, and must be individually packed in an inner packaging that is placed inside an outer specification packaging.
- A56 Radioactive material with a subsidiary hazard of Division 4.2, Packing Group I, must be transported in Type B packages when offered for transportation by aircraft. Radioactive material with a subsidiary hazard of Division 2.1 is forbidden from transport on passenger aircraft.
- A59 Sterilization devices, when containing less than 30 mL per inner packaging with no more than 300 mL per outer packaging may be transported in accordance with provisions in §173.4a, irrespective of §173.4a(b). In addition, after filling, each inner packaging must be determined to be

leak-tight by placing the inner packaging in a hot water bath at a temperature and for a period of time sufficient to ensure an internal pressure equal to the vapor pressure of ethylene oxide at 55 °C is achieved. Any inner packaging showing evidence of leakage, distortion or other defect under this test may not be transported under the terms of this special provision. In addition to the packaging required in §173.4a, inner packagings must be placed in a sealed plastic bag compatible with ethylene oxide and capable of containing the contents in the event of breakage or leakage of the inner packaging. Glass inner packagings must be placed within a protective shield capable of preventing the glass from puncturing the plastic bag in the event of damage to the packaging (e.g., crushing).

A60 Sterilization devices, when containing less than 30 mL per inner packaging with not more than 150 mL per outer packaging, may be transported in accordance with the provisions in §173.4a, irrespective of §173.4a(b), provided such packagings were first subjected to comparative fire testing. Comparative fire testing must show no difference in burning rate between a package as prepared for transport (including the substance to be transported) and an identical package filled with water.

A82 The quantity limits in columns (9A) and (9B) do not apply to human or animal body parts, whole organs or whole bodies known to contain or suspected of containing an infectious substance.

A100 Primary (non-rechargeable) lithium batteries and cells are forbidden for transport aboard passenger carrying aircraft. Secondary (rechargeable) lithium batteries and cells are authorized aboard passenger carrying aircraft in packages that do not exceed a gross weight of 5 kg.

A101 A primary lithium battery or cell packed with or contained in equipment is forbidden for transport aboard a passenger carrying aircraft unless the equipment and the battery conform to the following provisions and the package contains no more than the number of lithium batteries or cells necessary to power the intended piece of equipment:

(1) The lithium content of each cell, when fully charged, is not more than 5 grams.

(2) The aggregate lithium content of the anode of each battery, when fully charged, is not more than 25 grams.

(3) The net weight of lithium batteries does not exceed 5 kg (11 pounds).

A103 Equipment is authorized aboard passenger carrying aircraft if the gross weight of the inner package of secondary lithium batteries or cells packed with the equipment does not exceed 5 kg (11 pounds).

A104 The net weight of secondary lithium batteries or cells contained in equipment may not exceed 5 kg (11 pounds) in pack-

ages that are authorized aboard passenger carrying aircraft.

A105 The total net quantity of dangerous goods contained in one package, excluding magnetic material, must not exceed the following:

- a. 1 kg (2.2 pounds) in the case of solids;
- b. 0.5 L (0.1 gallons) in the case of liquids;
- c. 0.5 kg (1.1 pounds) in the case of Division 2.2 gases; or
- d. any combination thereof.

(3) "B" codes. These provisions apply only to bulk packagings. Except as otherwise provided in this subchapter, these special provisions do not apply to UN portable tanks or IBCs:

Code/Special Provisions

B1 If the material has a flash point at or above 38 °C (100 °F) and below 93 °C (200 °F), then the bulk packaging requirements of §173.241 of this subchapter are applicable. If the material has a flash point of less than 38 °C (100 °F), then the bulk packaging requirements of §173.242 of this subchapter are applicable.

B2 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.

B3 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks and DOT 57 portable tanks are not authorized.

B4 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.

B5 Only ammonium nitrate solutions with 35 percent or less water that will remain completely in solution under all conditions of transport at a maximum lading temperature of 116 °C (240 °F) are authorized for transport in the following bulk packagings: MC 307, MC 312, DOT 407 and DOT 412 cargo tanks with at least 172 kPa (25 psig) design pressure. The packaging shall be designed for a working temperature of at least 121 °C (250 °F). Only Specifications MC 304, MC 307 or DOT 407 cargo tank motor vehicles are authorized for transportation by vessel.

B6 Packagings shall be made of steel.

B7 Safety relief devices are not authorized on multi-unit tank car tanks. Openings for safety relief devices on multi-unit tank car tanks shall be plugged or blank flanged.

B8 Packagings shall be made of nickel, stainless steel, or steel with nickel, stainless steel, lead or other suitable corrosion resistant metallic lining.

B9 Bottom outlets are not authorized.

B10 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks, and DOT 57 portable tanks are not authorized.

B11 Tank car tanks must have a test pressure of at least 2,068.5 kPa (300 psig). Cargo and portable tanks must have a design pressure of at least 1,207 kPa (175 psig).

§ 172.102

49 CFR Ch. I (10–1–10 Edition)

- B13 A nonspecification cargo tank motor vehicle authorized in §173.247 of this subchapter must be at least equivalent in design and in construction to a DOT 406 cargo tank or MC 306 cargo tank (if constructed before August 31, 1995), except as follows:
- a. Packagings equivalent to MC 306 cargo tanks are excepted from the certification, venting, and emergency flow requirements of the MC 306 specification.
 - b. Packagings equivalent to DOT 406 cargo tanks are excepted from §§178.345–7(d)(5), circumferential reinforcements; 178.345–10, pressure relief; 178.345–11, outlets; 178.345–14, marking, and 178.345–15, certification.
 - c. Packagings are excepted from the design stress limits at elevated temperatures, as described in Section VIII of the ASME Code (IBR, see §171.7 of this subchapter). However, the design stress limits may not exceed 25 percent of the stress for 0 temper at the maximum design temperature of the cargo tank, as specified in the Aluminum Association's "Aluminum Standards and Data" (IBR, see §171.7 of this subchapter).
- B14 Each bulk packaging, except a tank car or a multi-unit-tank car tank, must be insulated with an insulating material so that the overall thermal conductance at 15.5 °C (60 °F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials must not promote corrosion to steel when wet.
- B15 Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance.
- B16 The lading must be completely covered with nitrogen, inert gas or other inert materials.
- B18 Open steel hoppers or bins are authorized.
- B23 Tanks must be made of steel that is rubber lined or unlined. Unlined tanks must be passivated before being placed in service. If unlined tanks are washed out with water, they must be re-passivated prior to return to service. Lading in unlined tanks must be inhibited so that the corrosive effect on steel is not greater than that of hydrofluoric acid of 65 percent concentration.
- B25 Packagings must be made from monel or nickel or monel-lined or nickel-lined steel.
- B26 Tanks must be insulated. Insulation must be at least 100 mm (3.9 inches) except that the insulation thickness may be reduced to 51 mm (2 inches) over the exterior heater coils. Interior heating coils are not authorized. The packaging may not be loaded with a material outside of the packaging's design temperature range. In addition, the material also must be covered with an inert gas or the container must be filled with water to the tank's capacity. After unloading, the residual material also must be covered with an inert gas or the container must be filled with water to the tank's capacity.
- B27 Tanks must have a service pressure of 1,034 kPa (150 psig). Tank car tanks must have a test pressure rating of 1,379 kPa (200 psig). Lading must be blanketed at all times with a dry inert gas at a pressure not to exceed 103 kPa (15 psig).
- B28 Packagings must be made of stainless steel.
- B30 MC 312, MC 330, MC 331 and DOT 412 cargo tanks and DOT 51 portable tanks must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of §173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads for cargo tanks and portable tanks must be the greater of 7.62 mm (0.300 inch) or the thickness required for a tank with a design pressure at least equal to 1.5 times the vapor pressure of the lading at 46 °C (115 °F). In addition, MC 312 and DOT 412 cargo tank motor vehicles must:
- a. Be ASME Code (U) stamped for 100% radiography of all pressure-retaining welds;
 - b. Have accident damage protection which conforms with §178.345–8 of this subchapter;
 - c. Have a MAWP or design pressure of at least 87 psig; and
 - d. Have a bolted manway cover.
- B32 MC 312, MC 330, MC 331, DOT 412 cargo tanks and DOT 51 portable tanks must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of §173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads for cargo tanks and portable tanks must be the greater of 6.35 mm (0.250 inch) or the thickness required for a tank with a design pressure at least equal to 1.3 times the vapor pressure of the lading at 46 °C (115 °F). In addition, MC 312 and DOT 412 cargo tank motor vehicles must:
- a. Be ASME Code (U) stamped for 100% radiography of all pressure-retaining welds;
 - b. Have accident damage protection which conforms with §178.345–8 of this subchapter;
 - c. Have a MAWP or design pressure of at least 87 psig; and
 - d. Have a bolted manway cover.
- B33 MC 300, MC 301, MC 302, MC 303, MC 305, MC 306, and DOT 406 cargo tanks equipped with a 1 psig normal vent used to transport gasoline must conform to Table I of this Special Provision. Based on the volatility class determined by using ASTM D 439 and

the Reid vapor pressure (RVP) of the particular gasoline, the maximum lading pressure and maximum ambient temperature permitted during the loading of gasoline may not exceed that listed in Table I.

TABLE I—MAXIMUM AMBIENT TEMPERATURE—GASOLINE

ASTM D439 volatility class	Maximum lading and ambient temperature (see note 1)
A (RVP≤9.0 psia)	131 °F
B (RVP≤10.0 psia)	124 °F
C (RVP≤11.5 psia)	116 °F
D (RVP≤13.5 psia)	107 °F
E (RVP≤15.0 psia)	100 °F

NOTE 1: Based on maximum lading pressure of 1 psig at top of cargo tank.

- B35 Tank cars containing hydrogen cyanide may be alternatively marked "Hydrocyanic acid, liquefied" if otherwise conforming to marking requirements in subpart D of this part. Tank cars marked "HYDROCYANIC ACID" prior to October 1, 1991 do not need to be remarked.
- B37 The amount of nitric oxide charged into any tank car tank may not exceed 1,379 kPa (200 psig) at 21 °C (70 °F).
- B42 Tank cars constructed before March 16, 2009, must have a test pressure of 34.47 Bar (500 psig) or greater and conform to Class 105J. Each tank car must have a reclosing pressure relief device having a start-to-discharge pressure of 10.34 Bar (150 psig). The tank car specification may be marked to indicate a test pressure of 13.79 Bar (200 psig).
- B44 All parts of valves and safety relief devices in contact with lading must be of a material which will not cause formation of acetylides.
- B45 Each tank must have a reclosing combination pressure relief device equipped with stainless steel or platinum rupture discs approved by the AAR Tank Car Committee.
- B46 The detachable protective housing for the loading and unloading valves of multi-unit tank car tanks must withstand tank test pressure and must be approved by the Associate Administrator.
- B47 Each tank may have a reclosing pressure relief device having a start-to-discharge pressure setting of 310 kPa (45 psig).
- B48 Portable tanks in sodium metal service may be visually inspected at least once every 5 years instead of being retested hydrostatically. Date of the visual inspection must be stenciled on the tank near the other required markings.

- B49 Tanks equipped with interior heater coils are not authorized. Single unit tank car tanks must have a reclosing pressure relief device having a start-to-discharge pressure set at no more than 1551 kPa (225 psig).
- B50 Each valve outlet of a multi-unit tank car tank must be sealed by a threaded solid plug or a threaded cap with inert luting or gasket material. Valves must be of stainless steel and the caps, plugs, and valve seats must be of a material that will not deteriorate as a result of contact with the lading.
- B52 Notwithstanding the provisions of §173.24b of this subchapter, non-reclosing pressure relief devices are authorized on DOT 57 portable tanks.
- B53 Packagings must be made of either aluminum or steel.
- B54 Open-top, sift-proof rail cars are also authorized.
- B55 Water-tight, sift-proof, closed-top, metal-covered hopper cars, equipped with a venting arrangement (including flame arrestors) approved by the Associate Administrator are also authorized.
- B56 Water-tight, sift-proof, closed-top, metal-covered hopper cars are also authorized if the particle size of the hazardous material is not less than 149 microns.
- B57 Class 115A tank car tanks used to transport chloroprene must be equipped with a non-reclosing pressure relief device of a diameter not less than 305 mm (12 inches) with a maximum rupture disc pressure of 310 kPa (45 psig).
- B59 Water-tight, sift-proof, closed-top, metal-covered hopper cars are also authorized provided that the lading is covered with a nitrogen blanket.
- B60 DOT Specification 106A500X multi-unit tank car tanks that are not equipped with a pressure relief device of any type are authorized. For the transportation of phosgene, the outage must be sufficient to prevent tanks from becoming liquid full at 55 °C (130 °F).
- B61 Written procedures covering details of tank car appurtenances, dome fittings, safety devices, and marking, loading, handling, inspection, and testing practices must be approved by the Associate Administrator before any single unit tank car tank is offered for transportation.
- B65 Tank cars constructed before March 16, 2009, must have a test pressure of 34.47 Bar (500 psig) or greater and conform to Class 105A. Each tank car must have a reclosing pressure relief device having a start-to-discharge pressure of 15.51 Bar (225 psig). The tank car specification may be marked to indicate a test pressure of 20.68 Bar (300 psig).
- B66 Each tank must be equipped with gas tight valve protection caps. Outage must

§ 172.102

49 CFR Ch. I (10–1–10 Edition)

- be sufficient to prevent tanks from becoming liquid full at 55 °C (130 °F). Specification 110A500W tanks must be stainless steel.
- B67 All valves and fittings must be protected by a securely attached cover made of metal not subject to deterioration by the lading, and all valve openings, except safety valve, must be fitted with screw plugs or caps to prevent leakage in the event of valve failure.
- B68 Sodium must be in a molten condition when loaded and allowed to solidify before shipment. Outage must be at least 5 percent at 98 °C (208 °F). Bulk packagings must have exterior heating coils fusion welded to the tank shell which have been properly stress relieved. The only tank car tanks authorized are Class DOT 105 tank cars having a test pressure of 2,069 kPa (300 psig) or greater.
- B69 Dry sodium cyanide or potassium cyanide may be shipped in the following sift-proof and weather-resistant packagings: metal covered hopper cars, covered motor vehicles, portable tanks, or non-specification bins.
- B70 If DOT 103ANW tank car tank is used: All cast metal in contact with the lading must have 96.7 percent nickel content; and the lading must be anhydrous and free from any impurities.
- B76 Tank cars constructed before March 16, 2009, must have a test pressure of 20.68 Bar (300 psig) or greater and conform to Class 105S, 112J, 114J or 120S. Each tank car must have a reclosing pressure relief device having a start-to-discharge pressure of 10.34 Bar (150 psig). The tank car specification may be marked to indicate a test pressure of 13.79 Bar (200 psig).
- B77 Other packaging are authorized when approved by the Associate Administrator.
- B78 Tank cars must have a test pressure of 4.14 Bar (60 psig) or greater and conform to Class 103, 104, 105, 109, 111, 112, 114 or 120. Heater pipes must be of welded construction designed for a test pressure of 500 psig. A 25 mm (1 inch) woven lining of asbestos or other approved material must be placed between the bolster slabbing and the bottom of the tank. If a tank car tank is equipped with a non-reclosing pressure relief device, the rupture disc must be perforated with a 3.2 mm (0.13 inch) diameter hole. If a tank car tank is equipped with a reclosing pressure relief valve, the tank must also be equipped with a vacuum relief valve.
- B80 Each cargo tank must have a minimum design pressure of 276 kPa (40 psig).
- B81 Venting and pressure relief devices for tank car tanks and cargo tanks must be approved by the Associate Administrator.
- B82 Cargo tanks and portable tanks are not authorized.
- B83 Bottom outlets are prohibited on tank car tanks transporting sulfuric acid in concentrations over 65.25 percent.
- B84 Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance for sulfuric acid or spent sulfuric acid in concentration up to 65.25 percent.
- B85 Cargo tanks must be marked with the name of the lading in accordance with the requirements of § 172.302(b).
- B90 Steel tanks conforming or equivalent to ASME specifications which contain solid or semisolid residual motor fuel anti-knock mixture (including rust, scale, or other contaminants) may be shipped by rail freight or highway. The tank must have been designed and constructed to be capable of withstanding full vacuum. All openings must be closed with gasketed blank flanges or vapor tight threaded closures.
- B115 Rail cars, highway trailers, roll-on/roll-off bins, or other non-specification bulk packagings are authorized. Packagings must be sift-proof, prevent liquid water from reaching the hazardous material, and be provided with sufficient venting to preclude dangerous accumulation of flammable, corrosive, or toxic gaseous emissions such as methane, hydrogen, and ammonia. The material must be loaded dry.
- (4) *IB Codes and IP Codes.* These provisions apply only to transportation in IBCs and Large Packagings. Table 1 authorizes IBCs for specific proper shipping names through the use of IB Codes assigned in the § 172.101 table of this subchapter. Table 2 defines IP Codes on the use of IBCs that are assigned to specific commodities in the § 172.101 Table of this subchapter. Table 3 authorizes Large Packagings for specific proper shipping names through the use of IB Codes assigned in the § 172.101 table of this subchapter. Large Packagings are authorized for the Packing Group III entries of specific proper shipping names when either Special Provision IB3 or IB8 is assigned to that entry in the § 172.101 Table. When no IB code is assigned in the § 172.101 Table for a specific proper shipping name, or in § 173.225(e) Organic Peroxide Table for Type F organic peroxides, use of an IBC or Large Packaging for the material may be authorized when approved by the Associate Administrator. The letter "Z" shown in the marking code for composite IBCs must be replaced with a capital code letter designation

found in §178.702(a)(2) of this subchapter to specify the material used for the other packaging. Tables 1, 2, and 3 follow:

TABLE 1—IB CODES (IBC CODES)

IBC Code	Authorized IBCs
IB1	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N). <i>Additional Requirement:</i> Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized.
IB2	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). <i>Additional Requirement:</i> Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized.
IB3	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). <i>Additional Requirement:</i> Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized, except for UN2672 (<i>also see Special Provision IP8 in Table 3 for UN2672</i>). For authorized Large Packagings, see Table 3.
IB4	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N).
IB5	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 21HZ1 and 31HZ1).
IB6	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2). <i>Additional Requirement:</i> Composite IBCs 11HZ2 and 21HZ2 may not be used when the hazardous materials being transported may become liquid during transport.
IB7	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Wooden (11C, 11D and 11F). <i>Additional Requirement:</i> Liners of wooden IBCs must be sift-proof.
IB8	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). For authorized Large Packagings, see Table 3.
IB9	IBCs are only authorized if approved by the Associate Administrator.

TABLE 2—IP CODES

IP Code	h
IP1	IBCs must be packed in closed freight containers or a closed transport vehicle.
IP2	When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.
IP3	Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
IP4	Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
IP5	IBCs must have a device to allow venting. The inlet to the venting device must be located in the vapor space of the IBC under maximum filling conditions.
IP6	Non-specification bulk bins are authorized.
IP7	For UN identification numbers 1327, 1363, 1364, 1365, 1386, 1841, 2211, 2217, 2793 and 3314, IBCs are not required to meet the IBC performance tests specified in part 178, subpart N of this subchapter.
IP8	Ammonia solutions may be transported in rigid or composite plastic IBCs (31H1, 31H2 and 31HZ1) that have successfully passed, without leakage or permanent deformation, the hydrostatic test specified in § 178.814 of this subchapter at a test pressure that is not less than 1.5 times the vapor pressure of the contents at 55 °C (131 °F).
IP13	Transportation by vessel in IBCs is prohibited.
IP14	Air must be eliminated from the vapor space by nitrogen or other means.
IP15	For UN2031 with more than 55% nitric acid, rigid plastic IBCs and composite IBCs with a rigid plastic inner receptacle are authorized for two years from the date of IBC manufacture.
IP20	Dry sodium cyanide or potassium cyanide is also permitted in siftproof, water-resistant, fiberboard IBCs when transported in closed freight containers or transport vehicles.

TABLE 3—IB CODES
[Large packaging authorizations]

IB3	Authorized Large Packagings (LIQUIDS) (PG III materials only) ²
Inner packagings: Glass 10 liter. Plastics 30 liter.	Large outer packagings: steel (50A). aluminum (50B).

TABLE 3—IB CODES—Continued
[Large packaging authorizations]

IB3	Authorized Large Packagings (LIQUIDS) (PG III materials only) ²
Metal 40 liter.	metal other than steel or aluminum (50N); rigid plastics (50H); natural wood (50C); plywood (50D); reconstituted wood (50F); rigid fiberboard (50G).
IB8	Authorized Large Packagings (SOLIDS) (PG III materials only) ²
Inner packagings: Glass 10 kg Plastics 50 kg Metal 50 kg Paper 50 kg Fiber 50 kg	Large outer packagings: steel (50A); aluminum (50B); metal other than steel or aluminum (50N); flexible plastics (51H). ¹ rigid plastics (50H); natural wood (50C); plywood (50D); reconstituted wood (50F); rigid fiberboard (50G).

¹Flexible plastic (51H) Large Packagings are only authorized for use with flexible inner packagings.
²Except when authorized under Special Provision 41.

(5) "N" codes. These provisions apply only to non-bulk packagings:

Code/Special Provisions

- N3 Glass inner packagings are permitted in combination or composite packagings only if the hazardous material is free from hydrofluoric acid.
- N4 For combination or composite packagings, glass inner packagings, other than ampoules, are not permitted.
- N5 Glass materials of construction are not authorized for any part of a packaging which is normally in contact with the hazardous material.
- N6 Battery fluid packaged with electric storage batteries, wet or dry, must conform to the packaging provisions of §173.159 (g) or (h) of this subchapter.
- N7 The hazard class or division number of the material must be marked on the package in accordance with §172.302 of this subchapter. However, the hazard label corresponding to the hazard class or division may be substituted for the marking.
- N8 Nitroglycerin solution in alcohol may be transported under this entry only when the solution is packed in metal cans of not more than 1 L capacity each, overpacked in a wooden box containing not more than 5 L. Metal cans must be completely surrounded with absorbent cushioning material. Wooden boxes must be completely lined with a suitable material impervious to water and nitroglycerin.
- N11 This material is excepted for the specification packaging requirements of this subchapter if the material is packaged in

strong, tight non-bulk packaging meeting the requirements of subparts A and B of part 173 of this subchapter.

- N12 Plastic packagings are not authorized.
- N20 A 5M1 multi-wall paper bag is authorized if transported in a closed transport vehicle.
- N25 Steel single packagings are not authorized.
- N32 Aluminum materials of construction are not authorized for single packagings.
- N33 Aluminum drums are not authorized.
- N34 Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.
- N36 Aluminum or aluminum alloy construction materials are permitted only for halogenated hydrocarbons that will not react with aluminum.
- N37 This material may be shipped in an integrally-lined fiber drum (1G) which meets the general packaging requirements of subpart B of part 173 of this subchapter, the requirements of part 178 of this subchapter at the packing group assigned for the material and to any other special provisions of column 7 of the §172.101 table.
- N40 This material is not authorized in the following packagings:
 - a. A combination packaging consisting of a 4G fiberboard box with inner receptacles of glass or earthenware;
 - b. A single packaging of a 4C2 sift-proof, natural wood box; or
 - c. A composite packaging 6PG2 (glass, porcelain or stoneware receptacles within a fiberboard box).

- N41 Metal construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.
- N42 1A1 drums made of carbon steel with thickness of body and heads of not less than 1.3 mm (0.050 inch) and with a corrosion-resistant phenolic lining are authorized for stabilized benzyl chloride if tested and certified to the Packing Group I performance level at a specific gravity of not less than 1.8.
- N43 Metal drums are permitted as single packagings only if constructed of nickel or monel.
- N45 Copper cartridges are authorized as inner packagings if the hazardous material is not in dispersion.
- N65 Outage must be sufficient to prevent cylinders or spheres from becoming liquid full at 55 °C (130 °F). The vacant space (outage) may be charged with a nonflammable nonliquefied compressed gas if the pressure in the cylinder or sphere at 55 °C (130 °F) does not exceed 125 percent of the marked service pressure.
- N72 Packagings must be examined by the Bureau of Explosives and approved by the Associate Administrator.
- N73 Packagings consisting of outer wooden or fiberboard boxes with inner glass, metal or other strong containers; metal or fiber drums; kegs or barrels; or strong metal cans are authorized and need not conform to the requirements of part 178 of this subchapter.
- N74 Packages consisting of tightly closed inner containers of glass, earthenware, metal or polyethylene, capacity not over 0.5 kg (1.1 pounds) securely cushioned and packed in outer wooden barrels or wooden or fiberboard boxes, not over 15 kg (33 pounds) net weight, are authorized and need not conform to the requirements of part 178 of this subchapter.
- N75 Packages consisting of tightly closed inner packagings of glass, earthenware or metal, securely cushioned and packed in outer wooden barrels or wooden or fiberboard boxes, capacity not over 2.5 kg (5.5 pounds) net weight, are authorized and need not conform to the requirements of part 178 of this subchapter.
- N76 For materials of not more than 25 percent active ingredient by weight, packages consisting of inner metal packagings not greater than 250 mL (8 ounces) capacity each, packed in strong outer packagings together with sufficient absorbent material to completely absorb the liquid contents are authorized and need not conform to the requirements of part 178 of this subchapter.
- N77 For materials of not more than two percent active ingredients by weight, packagings need not conform to the requirements of part 178 of this subchapter, if liquid contents are absorbed in an inert material.
- N78 Packages consisting of inner glass, earthenware, or polyethylene or other non-fragile plastic bottles or jars not over 0.5 kg (1.1 pounds) capacity each, or metal cans not over five pounds capacity each, packed in outer wooden boxes, barrels or kegs, or fiberboard boxes are authorized and need not conform to the requirements of part 178 of this subchapter. Net weight of contents in fiberboard boxes may not exceed 29 kg (64 pounds). Net weight of contents in wooden boxes, barrels or kegs may not exceed 45 kg (99 pounds).
- N79 Packages consisting of tightly closed metal inner packagings not over 0.5 kg (1.1 pounds) capacity each, packed in outer wooden or fiberboard boxes, or wooden barrels, are authorized and need not conform to the requirements of part 178 of this subchapter. Net weight of contents may not exceed 15 kg (33 pounds).
- N80 Packages consisting of one inner metal can, not over 2.5 kg (5.5 pounds) capacity, packed in an outer wooden or fiberboard box, or a wooden barrel, are authorized and need not conform to the requirements of part 178 of this subchapter.
- N82 See §173.115 of this subchapter for classification criteria for flammable aerosols.
- N83 This material may not be transported in quantities of more than 11.5 kg (25.4 lbs) per package.
- N84 The maximum quantity per package is 500 g (1.1 lbs.).
- N85 Packagings certified at the Packing Group I performance level may not be used.
- N86 UN pressure receptacles made of aluminum alloy are not authorized.
- N87 The use of copper valves on UN pressure receptacles is prohibited.
- N88 Any metal part of a UN pressure receptacle in contact with the contents may not contain more than 65% copper, with a tolerance of 1%.
- N89 When steel UN pressure receptacles are used, only those bearing the "H" mark are authorized.
- N90 Metal packagings are not authorized.
- (6) "*R*" codes. These provisions apply only to transportation by rail. [Reserved]
- (7) "*T*" codes. (i) These provisions apply to the transportation of hazardous materials in UN portable tanks. Portable tank instructions specify the requirements applicable to a portable tank when used for the transportation of a specific hazardous material. These requirements must be met in addition to the design and construction specifications in part 178 of this subchapter. Portable tank instructions T1 through

T22 specify the applicable minimum test pressure, the minimum shell thickness (in reference steel), bottom opening requirements and pressure relief requirements. Liquefied compressed gases are assigned to portable tank instruction T50. Refrigerated liquefied gases that are authorized to be transported in portable tanks are specified in tank instruction T75.

(ii) The following table specifies the portable tank requirements applicable to “T” Codes T1 through T22. Column 1 specifies the “T” Code. Column 2 specifies the minimum test pressure, in bar (1 bar = 14.5 psig), at which the periodic

hydrostatic testing required by §180.605 of this subchapter must be conducted. Column 3 specifies the section reference for minimum shell thickness or, alternatively, the minimum shell thickness value. Column 4 specifies the applicability of §178.275(g)(3) of this subchapter for the pressure relief devices. When the word “Normal” is indicated, §178.275(g)(3) of this subchapter does not apply. Column 5 references the applicable requirements for bottom openings in part 178 of this subchapter or references “Prohibited” which means bottom openings are prohibited. The table follows:

TABLE OF PORTABLE TANK T CODES T1–T22

[Portable tank codes T1–T22 apply to liquid and solid hazardous materials of Classes 3 through 9 which are transported in portable tanks.]

Portable tank instruction (1)	Minimum test pressure (bar) (2)	Minimum shell thickness (in mm-reference steel) (See § 178.274(d)) (3)	Pressure-relief requirements (See § 178.275(g)) (4)	Bottom opening requirements (See § 178.275(d)) (5)
T1	1.5	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T2	1.5	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T3	2.65	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T4	2.65	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T5	2.65	§ 178.274(d)(2)	§ 178.275(g)(3)	Prohibited
T6	4	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T7	4	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T8	4	§ 178.274(d)(2)	Normal	Prohibited
T9	4	6 mm	Normal	Prohibited
T10	4	6 mm	§ 178.275(g)(3)	Prohibited
T11	6	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T12	6	§ 178.274(d)(2)	§ 178.275(g)(3)	§ 178.275(d)(3)
T13	6	6 mm	Normal	Prohibited
T14	6	6 mm	§ 178.275(g)(3)	Prohibited
T15	10	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T16	10	§ 178.274(d)(2)	§ 178.275(g)(3)	§ 178.275(d)(3)
T17	10	6 mm	Normal	§ 178.275(d)(3)
T18	10	6 mm	§ 178.275(g)(3)	§ 178.275(d)(3)
T19	10	6 mm	§ 178.275(g)(3)	Prohibited
T20	10	8 mm	§ 178.275(g)(3)	Prohibited
T21	10	10 mm	Normal	Prohibited
T22	10	10 mm	§ 178.275(g)(3)	Prohibited

(iii) T50. When portable tank instruction T50 is referenced in Column (7) of the §172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of §173.313 of this subchapter.

(iv) T75. When portable tank instruction T75 is referenced in Column (7) of the §172.101 Table, the applicable refrigerated liquefied gases are authorized to be transported in portable tanks in accordance with the requirements of §178.277 of this subchapter.

(v) UN and IM portable tank codes/special provisions. When a specific portable

tank instruction is specified by a “T” Code in Column (7) of the §172.101 Table for a specific hazardous material, a specification portable tank conforming to an alternative tank instruction may be used if:

(A) The alternative portable tank has a higher or equivalent test pressure (for example, 4 bar when 2.65 bar is specified);

(B) The alternative portable tank has greater or equivalent wall thickness (for example, 10 mm when 6 mm is specified);

(C) The alternative portable tank has a pressure relief device as specified in

the "T" Code. If a frangible disc is required in series with the reclosing pressure relief device for the specified portable tank, the alternative portable tank must be fitted with a frangible disc in series with the reclosing pressure relief device; and

(D) With regard to bottom openings—

(1) When two effective means are specified, the alternative portable tank is fitted with bottom openings having two or three effective means of closure or no bottom openings; or

(2) When three effective means are specified, the portable tank has no bottom openings or three effective means of closure; or

(3) When no bottom openings are authorized, the alternative portable tank must not have bottom openings.

(vi) Except when an organic peroxide is authorized under § 173.225(g), if a hazardous material is not assigned a portable tank "T" Code, the hazardous material may not be transported in a portable tank unless approved by the Associate Administrator.

(8) "TP" codes. (i) These provisions apply to the transportation of hazardous materials in IM and UN Specification portable tanks. Portable tank special provisions are assigned to certain hazardous materials to specify requirements that are in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter. Portable tank special provisions are designated with the abbreviation TP (tank provision) and are assigned to specific hazardous materials in Column (7) of the § 172.101 Table.

(ii) The following is a list of the portable tank special provisions:

Code/Special Provisions

TP1 The maximum degree of filling must not exceed the degree of filling determined by the following:

$$\left(\text{Degree of filling} = \frac{97}{1 + \alpha(t_r - t_f)} \right)$$

Where:

t_r is the maximum mean bulk temperature during transport, and t_f is the temperature in degrees celsius of the liquid during filling.

TP2 a. The maximum degree of filling must not exceed the degree of filling determined by the following:

$$\left(\text{Degree of filling} = \frac{95}{1 + \alpha(t_r - t_f)} \right)$$

Where:

t_r is the maximum mean bulk temperature during transport,

t_f is the temperature in degrees celsius of the liquid during filling, and

α is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (t_f) and the maximum mean bulk temperature during transportation (t_r) both in degrees celsius.

b. For liquids transported under ambient conditions α may be calculated using the formula:

$$\alpha = \frac{d_{15} - d_{50}}{35 d_{50}}$$

Where:

d_{15} and d_{50} are the densities (in units of mass per unit volume) of the liquid at 15 °C (59 °F) and 50 °C (122 °F), respectively.

TP3 The maximum degree of filling (in %) for solids transported above their melting points and for elevated temperature liquids shall be determined by the following:

$$\left(\text{Degree of filling} = 95 \frac{d_r}{d_f} \right)$$

Where: d_f and d_r are the mean densities of the liquid at the mean temperature of the liquid during filling and the maximum mean bulk temperature during transport respectively.

TP4 The maximum degree of filling for portable tanks must not exceed 90%.

TP5 For a portable tank used for the transport of flammable refrigerated liquefied gases or refrigerated liquefied oxygen, the maximum rate at which the portable tank may be filled must not exceed the liquid flow capacity of the primary pressure relief system rated at a pressure not exceeding 120 percent of the portable tank's design pressure. For portable tanks used for the transport of refrigerated liquefied helium and refrigerated liquefied atmospheric gas (except oxygen), the maximum rate at which the tank is filled must not exceed the liquid flow capacity of the pressure relief device rated at 130 percent of the portable tank's design pressure. Except for a portable tank containing refrigerated liquefied helium, a portable tank shall have an outage of at least two percent below the inlet of the pressure relief device or pressure control valve, under

conditions of incipient opening, with the portable tank in a level attitude. No outage is required for helium.

TP6 The tank must be equipped with a pressure release device which prevent a tank from bursting under fire engulfment conditions (the conditions prescribed in CGA pamphlet S-1.2 (see §171.7 of this subchapter) or alternative conditions approved by the Associate Administrator may be used to consider the fire engulfment condition), taking into account the properties of the hazardous material to be transported.

TP7 The vapor space must be purged of air by nitrogen or other means.

TP8 A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flash point of the hazardous material transported is greater than 0 °C (32 °F).

TP9 A hazardous material assigned to special provision TP9 in Column (7) of the §172.101 Table may only be transported in a portable tank if approved by the Associate Administrator.

TP10 The portable tank must be fitted with a lead lining at least 5 mm (0.2 inches) thick. The lead lining must be tested annually to ensure that it is intact and functional. Another suitable lining material may be used if approved by the Associate Administrator.

TP12 This material is considered highly corrosive to steel.

TP13 Self-contained breathing apparatus must be provided when this hazardous material is transported by sea.

TP16 The portable tank must be protected against over and under pressurization which may be experienced during transportation. The means of protection must be approved by the approval agency designated to approve the portable tank in accordance with the procedures in part 107, subpart E, of this subchapter. The pressure relief device must be preceded by a frangible disk in accordance with the requirements in §178.275(g)(3) of this subchapter to prevent crystallization of the product in the pressure relief device.

TP17 Only inorganic non-combustible materials may be used for thermal insulation of the tank.

TP18 The temperature of this material must be maintained between 18 °C (64.4 °F) and 40 °C (104 °F) while in transportation. Portable tanks containing solidified methacrylic acid must not be reheated during transportation.

TP19 The calculated wall thickness must be increased by 3 mm at the time of construction. Wall thickness must be verified ultrasonically at intervals midway between periodic hydraulic tests (every 2.5 years). The portable tank must not be used if the wall thickness is less than that prescribed by the applicable T code in Column (7) of the Table for this material.

TP20 This hazardous material must only be transported in insulated tanks under a nitrogen blanket.

TP21 The wall thickness must not be less than 8 mm. Portable tanks must be hydraulically tested and internally inspected at intervals not exceeding 2.5 years.

TP22 Lubricants for portable tank fittings (for example, gaskets, shut-off valves, flanges) must be oxygen compatible.

TP24 The portable tank may be fitted with a device to prevent the build up of excess pressure due to the slow decomposition of the hazardous material being transported. The device must be in the vapor space when the tank is filled under maximum filling conditions. This device must also prevent an unacceptable amount of leakage of liquid in the case of overturning.

TP25 Sulphur trioxide 99.95% pure and above may be transported in tanks without an inhibitor provided that it is maintained at a temperature equal to or above 32.5 °C (90.5 °F).

TP26 The heating device must be exterior to the shell. For UN 3176, this requirement only applies when the hazardous material reacts dangerously with water.

TP27 A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in §178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP28 A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in §178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP29 A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in §178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP30 This hazardous material may only be transported in insulated tanks.

TP31 This hazardous material may only be transported in tanks in the solid state.

TP32 Portable tanks may be used subject to the following conditions:

a. Each portable tank constructed of metal must be fitted with a pressure-relief device consisting of a reclosing spring loaded type, a frangible disc or a fusible element. The set to discharge for the spring loaded pressure relief device and the burst pressure for the frangible disc, as applicable, must not be greater than 2.65 bar for portable tanks with minimum test pressures greater than 4 bar;

b. The suitability for transport in tanks must be demonstrated using test 8(d) in Test

Series 8 (see UN Manual of Tests and Criteria, Part 1, Sub-section 18.7) (IBR, see §171.7 of this subchapter) or an alternative means approved by the Associate Administrator.

TP33 The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

TP37 IM portable tanks are only authorized for the shipment of hydrogen peroxide solutions in water containing 72% or less hydrogen peroxide by weight. Pressure relief devices shall be designed to prevent the entry of foreign matter, the leakage of liquid and the development of any dangerous excess pressure. In addition, the portable tank must be designed so that internal surfaces may be effectively cleaned and passivated. Each tank must be equipped with pressure relief devices conforming to the following requirements:

Concentration of hydrogen peroxide solution	Total ¹
52% or less	11
Over 52%, but not greater than 60%	22
Over 60%, but not greater than 72%	32

¹Total venting capacity in standard cubic feet hour (S.C.F.H.) per pound of hydrogen peroxide solution.

TP38 Each portable tank must be insulated with an insulating material so that the overall thermal conductance at 15.5 °C (60 °F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials may not promote corrosion to steel when wet.

TP44 Each portable tank must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of §173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads must be the greater of 7.62 mm (0.300 inch) or the thickness required for a portable tank with a design pressure at

least equal to 1.5 times the vapor pressure of the hazardous material at 46 °C (115 °F).

TP45 Each portable tank must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of 173.24b(b) of this subchapter. Thickness of stainless steel for portable tank shells and heads must be the greater of 6.35 mm (0.250 inch) or the thickness required for a portable tank with a design pressure at least equal to 1.3 times the vapor pressure of the hazardous material at 46 °C (115 °F).

TP46 Portable tanks in sodium metal service are not required to be hydrostatically retested.

(9) "W" codes. These provisions apply only to transportation by water:

Code/Special Provisions

W7 Vessel stowage category for uranyl nitrate hexahydrate solution is "D" as defined in §172.101(k)(4).

W8 Vessel stowage category for pyrophoric thorium metal or pyrophoric uranium metal is "D" as defined in §172.101(k)(4).

W9 When offered for transportation by water, the following Specification packagings are not authorized unless approved by the Associate Administrator: woven plastic bags, plastic film bags, textile bags, paper bags, IBCs and bulk packagings.

W41 When offered for transportation by water, this material must be packaged in bales and be securely and tightly bound with rope, wire or similar means.

[Amdt. 172-123, 55 FR 52582, Dec. 21, 1990]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §172.102, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

Subpart C—Shipping Papers

§ 172.200 Applicability.

(a) *Description of hazardous materials required.* Except as otherwise provided in this subpart, each person who offers a hazardous material for transportation shall describe the hazardous material on the shipping paper in the manner required by this subpart.

(b) This subpart does not apply to any material, other than a hazardous substance, hazardous waste or marine pollutant, that is—

(1) Identified by the letter "A" in column 1 of the §172.101 table, except when the material is offered or intended for transportation by air; or

§ 172.201

49 CFR Ch. I (10–1–10 Edition)

(2) Identified by the letter "W" in column 1 of the §172.101 table, except when the material is offered or intended for transportation by water; or

(3) An ORM-D, except when the material is offered or intended for transportation by air.

(4) Category B infectious substances prepared in accordance with §173.199.

[Amdt. 172-29A, 41 FR 40677, Sept. 20, 1976, as amended by Amdt. 172-58, 45 FR 34697, May 22, 1980; Amdt. 172-74, 47 FR 43065, Sept. 30, 1982; Amdt. 172-112, 53 FR 17160, May 13, 1988; Amdt. 172-127, 57 FR 52938, Nov. 5, 1992; 71 FR 32258, June 2, 2006]

§ 172.201 Preparation and retention of shipping papers.

(a) *Contents.* When a description of hazardous material is required to be included on a shipping paper, that description must conform to the following requirements:

(1) When a hazardous material and a material not subject to the requirements of this subchapter are described on the same shipping paper, the hazardous material description entries required by §172.202 and those additional entries that may be required by §172.203:

(i) Must be entered first, or

(ii) Must be entered in a color that clearly contrasts with any description on the shipping paper of a material not subject to the requirements of this subchapter, except that a description on a reproduction of a shipping paper may be highlighted, rather than printed, in a contrasting color (the provisions of this paragraph apply only to the basic description required by §172.202(a)(1), (2), (3), and (4)), or

(iii) Must be identified by the entry of an "X" placed before the basic shipping description required by §172.202 in a column captioned "HM." (The "X" may be replaced by "RQ," if appropriate.)

(2) The required shipping description on a shipping paper and all copies thereof used for transportation purposes, must be legible and printed (manually or mechanically) in English.

(3) Unless it is specifically authorized or required in this subchapter, the required shipping description may not contain any code or abbreviation.

(4) A shipping paper may contain additional information concerning the material provided the information is not inconsistent with the required description. Unless otherwise permitted or required by this subpart, additional information must be placed after the basic description required by §172.202(a).

(b) [Reserved]

(c) *Continuation page.* A shipping paper may consist of more than one page, if each page is consecutively numbered and the first page bears a notation specifying the total number of pages included in the shipping paper. For example, "Page 1 of 4 pages."

(d) *Emergency response telephone number.* Except as provided in §172.604(c), a shipping paper must contain an emergency response telephone number and, if utilizing an emergency response information telephone number service provider, identify the person (by name or contract number) who has a contractual agreement with the service provider, as prescribed in subpart G of this part.

(e) *Retention and Recordkeeping.* Each person who provides a shipping paper must retain a copy of the shipping paper required by §172.200(a), or an electronic image thereof, that is accessible at or through its principal place of business and must make the shipping paper available, upon request, to an authorized official of a Federal, State, or local government agency at reasonable times and locations. For a hazardous waste, the shipping paper copy must be retained for three years after the material is accepted by the initial carrier. For all other hazardous materials, the shipping paper must be retained for two years after the material is accepted by the initial carrier. Each shipping paper copy must include the date of acceptance by the initial carrier, except that, for rail, vessel, or air shipments, the date on the shipment waybill, airbill, or bill of lading may be used in place of the date of acceptance by the initial carrier. A motor carrier (as defined in §390.5 of subchapter B of chapter III of subtitle B) using a shipping paper without change for multiple shipments of one or more hazardous materials having

the same shipping name and identification number may retain a single copy of the shipping paper, instead of a copy for each shipment made, if the carrier also retains a record of each shipment made, to include shipping name, identification number, quantity transported, and date of shipment.

[Amdt. 172-29A, 41 FR 40677, Sept. 20, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §172.201, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 172.202 Description of hazardous material on shipping papers.

(a) The shipping description of a hazardous material on the shipping paper must include:

(1) The identification number prescribed for the material as shown in Column (4) of the §172.101 table;

(2) The proper shipping name prescribed for the material in Column (2) of the §172.101 table;

(3) The hazard class or division number prescribed for the material, as shown in Column (3) of the §172.101 table. The subsidiary hazard class or division number is not required to be entered when a corresponding subsidiary hazard label is not required. Except for combustible liquids, the subsidiary hazard class(es) or subsidiary division number(s) must be entered in parentheses immediately following the primary hazard class or division number. In addition—

(i) The words "Class" or "Division" may be included preceding the primary and subsidiary hazard class or division numbers.

(ii) The hazard class need not be included for the entry "Combustible liquid, n.o.s."

(iii) For domestic shipments, primary and subsidiary hazard class or division names may be entered following the numerical hazard class or division, or following the basic description.

(4) The packing group in Roman numerals, as designated for the hazardous material in Column (5) of the §172.101 table. Class 1 (explosives) materials; self-reactive substances; batteries other than those containing lithium, lithium ions, or sodium; Division 5.2 materials; and entries that are not as-

signed a packing group (e.g., Class 7) are excepted from this requirement. The packing group may be preceded by the letters "PG" (for example, "PG II"); and

(5) Except for transportation by aircraft, the total quantity of hazardous materials covered by the description must be indicated (by mass or volume, or by activity for Class 7 materials) and must include an indication of the applicable unit of measurement, for example, "200 kg" (440 pounds) or "50 L" (13 gallons). The following provisions also apply:

(i) For Class 1 materials, the quantity must be the net explosive mass. For an explosive that is an article, such as Cartridges, small arms, the net explosive mass may be expressed in terms of the net mass of either the article or the explosive materials contained in the article.

(ii) For hazardous materials in salvage packaging, an estimate of the total quantity is acceptable.

(iii) The following are excepted from the requirements of paragraph (a)(5) of this section:

(A) Bulk packages, provided some indication of the total quantity is shown, for example, "1 cargo tank" or "2 IBCs."

(B) Cylinders, provided some indication of the total quantity is shown, for example, "10 cylinders."

(C) Packages containing only residue.

(6) For transportation by aircraft, the total net mass per package, must be shown unless a gross mass is indicated in Columns (9A) or (9B) of the §172.101 table in which case the total gross mass per package must be shown; or, for Class 7 materials, the quantity of radioactive material must be shown by activity. The following provisions also apply:

(i) For empty uncleaned packaging, only the number and type of packaging must be shown;

(ii) For chemical kits and first aid kits, the total net mass of hazardous materials must be shown. Where the kits contain only liquids, or solids and liquids, the net mass of liquids within the kits is to be calculated on a 1 to 1 basis, i.e., 1 L (0.3 gallons) equals 1 kg (2.2 pounds);

§ 172.203

(iii) For dangerous goods in machinery or apparatus, the individual total quantities or an estimate of the individual total quantities of dangerous goods in solid, liquid or gaseous state, contained in the article must be shown;

(iv) For dangerous goods transported in a salvage packaging, an estimate of the quantity of dangerous goods per package must be shown;

(v) For cylinders, total quantity may be indicated by the number of cylinders, for example, "10 cylinders;"

(vi) For items where "No Limit" is shown in Column (9A) or (9B) of the §172.101 table, the quantity shown must be the net mass or volume of the material. For articles (e.g., UN2800 and UN3166) the quantity must be the gross mass, followed by the letter "G"; and

(7) The number and type of packages must be indicated. The type of packages must be indicated by description of the package (for example, "12 drums"). Indication of the packaging specification number ("1H1") may be included in the description of the package (for example, "12 1H1 drums" or "12 drums (UN 1A1)"). Abbreviations may be used for indicating packaging types (for example, "cyl." for "cylinder") provided the abbreviations are commonly accepted and recognizable.

(b) Except as provided in this subpart, the basic description specified in paragraphs (a)(1), (2), (3) and (4) of this section must be shown in sequence with no additional information interspersed. For example, "UN2744, Cyclobutyl chloroformate, 6.1, (8, 3), PG II."

(c) The total quantity of the material covered by one description must appear before or after, or both before and after, the description required and authorized by this subpart. The type of packaging and destination marks may be entered in any appropriate manner before or after the basic description. Abbreviations may be used to express units of measurement and types of packagings.

(d) Technical and chemical group names may be entered in parentheses between the proper shipping name and hazard class or following the basic description. An appropriate modifier, such as "contains" or "containing," and/or the percentage of the technical

49 CFR Ch. I (10–1–10 Edition)

constituent may also be used. For example: "Flammable liquids, n.o.s. (contains Xylene and Benzene), 3, UN 1993, II".

(e) Except for those materials in the UN Recommendations, the ICAO Technical Instructions, or the IMDG Code (IBR, see §171.7 of this subchapter), a material that is not a hazardous material according to this subchapter may not be offered for transportation or transported when its description on a shipping paper includes a hazard class or an identification number specified in the §172.101 Table.

[Amdt. 172-101, 45 FR 74665, Nov. 10, 1980, as amended by Amdt. 172-103, 51 FR 5970, Feb. 18, 1986; Amdt. 172-123, 55 FR 52589, Dec. 21, 1990; 56 FR 66252, Dec. 20, 1991; Amdt. 172-127, 57 FR 52938, Nov. 5, 1992; Amdt. 172-130, 58 FR 51531, Oct. 1, 1993; 66 FR 33425, June 21, 2001; 68 FR 45030, July 31, 2003; 68 FR 75741, Dec. 31, 2003; 69 FR 34611, June 22, 2004; 69 FR 54046, Sept. 7, 2004; 69 FR 76153, Dec. 20, 2004; 70 FR 34397, June 14, 2005; 71 FR 78626, Dec 29, 2006; 72 FR 55692, Oct. 1, 2007; 73 FR 57005, Oct. 1, 2008; 74 FR 2252, Jan. 14, 2009; 75 FR 72, Jan. 4, 2010]

§ 172.203 Additional description requirements.

(a) *Special permits.* Except as provided in §173.23 of this subchapter, each shipping paper issued in connection with a shipment made under a special permit must bear the notation "DOT-SP" followed by the special permit number assigned and located so that the notation is clearly associated with the description to which the special permit applies. Each shipping paper issued in connection with a shipment made under an exemption or special permit issued prior to October 1, 2007, may bear the notation "DOT-E" followed by the number assigned and so located that the notation is clearly associated with the description to which it applies.

(b) *Limited quantities.* The description for a material offered for transportation as "limited quantity," as authorized by this subchapter, must include the words "Limited Quantity" or "Ltd Qty" following the basic description.

(c) *Hazardous substances.* (1) Except for Class 7 (radioactive) materials described in accordance with paragraph

(d) of this section, if the proper shipping name for a material that is a hazardous substance does not identify the hazardous substance by name, the name of the hazardous substance must be entered in parentheses in association with the basic description. If the material contains two or more hazardous substances, at least two hazardous substances, including the two with the lowest reportable quantities (RQs), must be identified. For a hazardous waste, the waste code (e.g., D001), if appropriate, may be used to identify the hazardous substance.

(2) The letters "RQ" must be entered on the shipping paper either before or after the basic description required by §172.202 for each hazardous substance (see definition in §171.8 of this subchapter). For example: "RQ, UN 1098, Allyl alcohol, 6.1, I, Toxic-inhalation hazard, Zone B"; or "UN 3077, Environmentally hazardous substances, solid, n.o.s., 9, III, RQ (Adipic acid)".

(d) *Radioactive material.* The description for a shipment of a Class 7 (radioactive) material must include the following additional entries as appropriate:

(1) The name of each radionuclide in the Class 7 (radioactive) material that is listed in §173.435 of this subchapter. For mixtures of radionuclides, the radionuclides required to be shown must be determined in accordance with §173.433(g) of this subchapter. Abbreviations, e.g., "⁹⁹Mo," are authorized.

(2) A description of the physical and chemical form of the material, if the material is not in special form (generic chemical description is acceptable for chemical form).

(3) The activity contained in each package of the shipment in terms of the appropriate SI units (e.g., Becquerels (Bq), Terabecquerels (TBq), etc.). The activity may also be stated in appropriate customary units (Curies (Ci), milliCuries (mCi), microCuries (uCi), etc.) in parentheses following the SI units. Abbreviations are authorized. Except for plutonium-239 and plutonium-241, the weight in grams or kilograms of fissile radionuclides may be inserted instead of activity units. For plutonium-239 and plutonium-241, the weight in grams of fissile radionuclides

may be inserted in addition to the activity units.

(4) The category of label applied to each package in the shipment. For example: "RADIOACTIVE WHITE-I."

(5) The transport index assigned to each package in the shipment bearing RADIOACTIVE YELLOW-II or RADIOACTIVE YELLOW-III labels.

(6) For a package containing fissile Class 7 (radioactive) material:

(i) The words "Fissile Excepted" if the package is excepted pursuant to §173.453 of this subchapter; or otherwise

(ii) The criticality safety index for that package.

(7) For a package approved by the U.S. Department of Energy (DOE) or U.S. Nuclear Regulatory Commission (NRC), a notation of the package identification marking as prescribed in the applicable DOE or NRC approval (see §173.471 of the subchapter).

(8) For an export shipment or a shipment in a foreign made package, a notation of the package identification marking as prescribed in the applicable International Atomic Energy Agency (IAEA) Certificate of Competent Authority which has been issued for the package (see §173.473 of the subchapter).

(9) For a shipment required by this subchapter to be consigned as exclusive use:

(i) An indication that the shipment is consigned as exclusive use; or

(ii) If all the descriptions on the shipping paper are consigned as exclusive use, then the statement "Exclusive Use Shipment" may be entered only once on the shipping paper in a clearly visible location.

(10) For the shipment of a package containing a highway route controlled quantity of Class 7 (radioactive) materials (see §173.403 of this subchapter) the words "Highway route controlled quantity" or "HRCQ" must be entered in association with the basic description.

(e) *Empty packagings.* (1) The description on the shipping paper for a packaging containing the residue of a hazardous material may include the words "RESIDUE: Last Contained * * *" in association with the basic description

of the hazardous material last contained in the packaging.

(2) The description on the shipping paper for a tank car containing the residue of a hazardous material must include the phrase, "RESIDUE: LAST CONTAINED * * *" before the basic description.

(f) *Transportation by air.* A statement indicating that the shipment is within the limitations prescribed for either passenger and cargo aircraft or cargo aircraft only must be entered on the shipping paper.

(g) *Transportation by rail.* (1) A shipping paper prepared by a rail carrier for a rail car, freight container, transport vehicle or portable tank that contains hazardous materials must include the reporting mark and number when displayed on the rail car, freight container, transport vehicle or portable tank.

(2) The shipping paper for each DOT-113 tank car containing a Division 2.1 material or its residue must contain an appropriate notation, such as "DOT 113", and the statement "Do not hump or cut off car while in motion."

(3) When shipments of elevated temperature materials are transported under the exception permitted in § 173.247(h)(3) of this subchapter, the shipping paper must contain an appropriate notation, such as "Maximum operating speed 15 mph."

(h) *Transportation by highway.* Following the basic description for a hazardous material in a Specification MC 330 or MC 331 cargo tank, there must be entered for—

(1) *Anhydrous ammonia.* (i) The words "0.2 PERCENT WATER" to indicate the suitability for shipping anhydrous ammonia in a cargo tank made of quenched and tempered steel as authorized by § 173.315(a), Note 14 of this subchapter, or

(ii) The words "NOT FOR Q and T TANKS" when the anhydrous ammonia does not contain 0.2 percent or more water by weight.

(2) *Liquefied petroleum gas.* (i) The word "NONCORROSIVE" or "NONCOR" to indicate the suitability for shipping "Noncorrosive" liquefied petroleum gas in a cargo tank made of quenched and tempered steel as author-

ized by § 173.315(a), Note 15 of this subchapter, or

(ii) The words "NOT FOR Q and T TANKS" for grades of liquefied petroleum gas other than "Noncorrosive".

(i) *Transportation by water.* Each shipment by water must have the following additional shipping paper entries:

(1) The name of the shipper.

(2) Minimum flash point if 60 °C (140 °F) or below (in °C closed cup (c.c.)) in association with the basic description.

(3) For a hazardous material consigned under an "n.o.s." entry not included in the segregation groups listed in section 3.1.4 of the IMDG Code but belonging, in the opinion of the consignor, to one of these groups, the appropriate segregation group must be shown in association with the basic description (for example, IMDG Code segregation group—1 Acids). When no segregation group is applicable, there is no requirement to indicate that condition.

(j) [Reserved]

(k) *Technical names for "n.o.s." and other generic descriptions.* Unless otherwise excepted, if a material is described on a shipping paper by one of the proper shipping names identified by the letter "G" in column (1) of the § 172.101 Table, the technical name of the hazardous material must be entered in parentheses in association with the basic description. For example "Corrosive liquid, n.o.s., (Octanoyl chloride), 8, UN 1760, II", or "Corrosive liquid, n.o.s., 8, UN 1760, II (contains Octanoyl chloride)". The word "contains" may be used in association with the technical name, if appropriate. For organic peroxides which may qualify for more than one generic listing depending on concentration, the technical name must include the actual concentration being shipped or the concentration range for the appropriate generic listing. For example, "Organic peroxide type B, solid, 5.2, UN 3102 (dibenzoyl peroxide, 52–100%)" or "Organic peroxide type E, solid, 5.2, UN 3108 (dibenzoyl peroxide, paste, <52%)". Shipping descriptions for toxic materials that meet the criteria of Division 6.1, PG I or II (as specified in § 173.132(a) of this subchapter) or Division 2.3 (as

specified in §173.115(c) of this subchapter) and are identified by the letter "G" in column (1) of the §172.101 Table, must have the technical name of the toxic constituent entered in parentheses in association with the basic description. A material classed as Division 6.2 and assigned identification number UN 2814 or UN 2900 that is suspected to contain an unknown Category A infectious substance must have the words "suspected Category A infectious substance" entered in parentheses in place of the technical name as part of the proper shipping description. For additional technical name options, see the definition for "Technical name" in §171.8. A technical name should not be marked on the outer package of a Division 6.2 material (see §172.301(b)).

(1) If a hazardous material is a mixture or solution of two or more hazardous materials, the technical names of at least two components most predominately contributing to the hazards of the mixture or solution must be entered on the shipping paper as required by paragraph (k) of this section. For example, "Flammable liquid, corrosive, n.o.s., 3, UN 2924, II (contains Methanol, Potassium hydroxide)".

(2) The provisions of this paragraph do not apply—

(i) To a material that is a hazardous waste and described using the proper shipping name "Hazardous waste, liquid or solid, n.o.s.", classed as a miscellaneous Class 9, provided the EPA hazardous waste number is included on the shipping paper in association with the basic description, or provided the material is described in accordance with the provisions of §172.203(c) of this part.

(ii) To a material for which the hazard class is to be determined by testing under the criteria in §172.101(c)(11).

(iii) If the n.o.s. description for the material (other than a mixture of hazardous materials of different classes meeting the definitions of more than one hazard class) contains the name of the chemical element or group which is primarily responsible for the material being included in the hazard class indicated.

(iv) If the n.o.s. description for the material (which is a mixture of haz-

ardous materials of different classes meeting the definition of more than one hazard class) contains the name of the chemical element or group responsible for the material meeting the definition of one of these classes. In such cases, only the technical name of the component that is not appropriately identified in the n.o.s. description shall be entered in parentheses.

(1) *Marine pollutants.* (1) If the proper shipping name for a material which is a marine pollutant does not identify by name the component which makes the material a marine pollutant, the name of that component must appear in parentheses in association with the basic description. Where two or more components which make a material a marine pollutant are present, the names of at least two of the components most predominately contributing to the marine pollutant designation must appear in parentheses in association with the basic description.

(2) The words "Marine Pollutant" shall be entered in association with the basic description for a material which is a marine pollutant.

(3) Except for transportation by vessel, marine pollutants subject to the provisions of 49 CFR 130.11 are excepted from the requirements of paragraph (1) of this section if a phrase indicating the material is an oil is placed in association with the basic description.

(4) Except when all or part of transportation is by vessel, marine pollutants in non-bulk packagings are not subject to the requirements of paragraphs (1)(1) and (1)(2) of this section (see §171.4 of this subchapter).

(m) *Poisonous Materials.* Notwithstanding the hazard class to which a material is assigned, for materials that are poisonous by inhalation (see §171.8 of this subchapter), the words "Poison-Inhalation Hazard" or "Toxic-Inhalation Hazard" and the words "Zone A", "Zone B", "Zone C", or "Zone D" for gases or "Zone A" or "Zone B" for liquids, as appropriate, shall be entered on the shipping paper immediately following the shipping description. The word "Poison" or "Toxic" need not be repeated if it otherwise appears in the shipping description.

(n) *Elevated temperature materials.* If a liquid material in a package meets the

definition of an elevated temperature material in §171.8 of this subchapter, and the fact that it is an elevated temperature material is not disclosed in the proper shipping name (for example, when the words “Molten” or “Elevated temperature” are part of the proper shipping name), the word “HOT” must immediately precede the proper shipping name of the material on the shipping paper.

(o) *Organic peroxides and self-reactive materials.* The description on a shipping paper for a Division 4.1 (self-reactive) material or a Division 5.2 (organic peroxide) material must include the following additional information, as appropriate:

(1) If notification or competent authority approval is required, the shipping paper must contain a statement of approval of the classification and conditions of transport.

(2) For Division 4.1 (self-reactive) and Division 5.2 (organic peroxide) materials that require temperature control during transport, the control and emergency temperature must be included on the shipping paper.

(3) The word “SAMPLE” must be included in association with the basic description when a sample of a Division 4.1 (self-reactive) material (see §173.224(c)(3) of this subchapter) or Division 5.2 (organic peroxide) material (see §173.225(b)(2) of this subchapter) is offered for transportation.

[Amdt. 172–29A, 41 FR 40677, Sept. 20, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §172.203, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 172.204 Shipper's certification.

(a) *General.* Except as provided in paragraphs (b) and (c) of this section, each person who offers a hazardous material for transportation shall certify that the material is offered for transportation in accordance with this subchapter by printing (manually or mechanically) on the shipping paper containing the required shipping description the certification contained in paragraph (a)(1) of this section or the certification (declaration) containing the language contained in paragraph (a)(2) of this section.

(1) “This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.”

NOTE: In line one of the certification the words “herein-named” may be substituted for the words “above-named”.

(2) “I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.”

(b) *Exceptions.* (1) Except for a hazardous waste, no certification is required for a hazardous material offered for transportation by motor vehicle and transported:

(i) In a cargo tank supplied by the carrier, or

(ii) By the shipper as a private carrier except for a hazardous material that is to be reshipped or transferred from one carrier to another.

(2) No certification is required for the return of an empty tank car which previously contained a hazardous material and which has not been cleaned or purged.

(c) *Transportation by air—(1) General.* Certification containing the following language may be used in place of the certification required by paragraph (a) of this section:

I hereby certify that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labeled, and in proper condition for carriage by air according to applicable national governmental regulations.

NOTE TO PARAGRAPH (c)(1): In the certification, the word “packed” may be used instead of the word “packaged” until October 1, 2010.

(2) *Certificate in duplicate.* Each person who offers a hazardous material to an aircraft operator for transportation by air shall provide two copies of the certification required in this section. (See §175.30 of this subchapter.)

(3) *Additional certification requirements.* Effective October 1, 2006, each

person who offers a hazardous material for transportation by air must add to the certification required in this section the following statement:

"I declare that all of the applicable air transport requirements have been met."

(i) Each person who offers any package or overpack of hazardous materials for transport by air must ensure that:

(A) The articles or substances are not prohibited for transport by air (see the §172.101 Table);

(B) The articles or substances are properly classed, marked and labeled and otherwise in a condition for transport as required by this subchapter;

(C) The articles or substances are packaged in accordance with all the applicable air transport requirements, including appropriate types of packaging that conform to the packing requirements and the "A" Special Provisions in §172.102; inner packaging and maximum quantity per package limits; the compatibility requirements (see, for example, §173.24 of this subchapter); and requirements for closure for both inner and outer packagings, absorbent materials, and pressure differential in §173.27 of this subchapter. Other requirements may also apply. For example, single packagings may be prohibited, inner packaging may need to be packed in intermediate packagings, and certain materials may be required to be transported in packagings meeting a more stringent performance level.

(ii) [Reserved]

(4) *Radioactive material.* Each person who offers any radioactive material for transportation aboard a passenger-carrying aircraft shall sign (mechanically or manually) a printed certificate stating that the shipment contains radioactive material intended for use in, or incident to, research, or medical diagnosis or treatment.

(d) *Signature.* The certifications required by paragraph (a) or (c) of this section:

(1) Must be legibly signed by a principal, officer, partner, or employee of the shipper or his agent; and

(2) May be legibly signed manually, by typewriter, or by other mechanical means.

[Amdt. 172-29A, 41 FR 40677, Sept. 20, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §172.204, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 172.205 Hazardous waste manifest.

(a) No person may offer, transport, transfer, or deliver a hazardous waste (waste) unless an EPA Form 8700-22 and 8700-22A (when necessary) hazardous waste manifest (manifest) is prepared in accordance with 40 CFR 262.20 and is signed, carried, and given as required of that person by this section.

(b) The shipper (generator) shall prepare the manifest in accordance with 40 CFR part 262.

(c) The original copy of the manifest must be dated by, and bear the handwritten signature of, the person representing:

(1) The shipper (generator) of the waste at the time it is offered for transportation, and

(2) The initial carrier accepting the waste for transportation.

(d) A copy of the manifest must be dated by, and bear the handwritten signature of the person representing:

(1) Each subsequent carrier accepting the waste for transportation, at the time of acceptance, and

(2) The designated facility receiving the waste, upon receipt.

(e) A copy of the manifest bearing all required dates and signatures must be:

(1) Given to a person representing each carrier accepting the waste for transportation,

(2) Carried during transportation in the same manner as required by this subchapter for shipping papers,

(3) Given to a person representing the designated facility receiving the waste,

(4) Returned to the shipper (generator) by the carrier that transported the waste from the United States to a foreign destination with a notation of the date of departure from the United States, and

(5) Retained by the shipper (generator) and by the initial and each subsequent carrier for three years from the date the waste was accepted by the initial carrier. Each retained copy must bear all required signatures and dates up to and including those entered by

§ 172.300

the next person who received the waste.

(f) *Transportation by rail.* Notwithstanding the requirements of paragraphs (d) and (e) of this section, the following requirements apply:

(1) When accepting hazardous waste from a non-rail transporter, the initial rail transporter must:

(i) Sign and date the manifest acknowledging acceptance of the hazardous waste;

(ii) Return a signed copy of the manifest to the non-rail transporter;

(iii) Forward at least three copies of the manifest to:

(A) The next non-rail transporter, if any;

(B) The designated facility, if the shipment is delivered to that facility by rail; or

(C) The last rail transporter designated to handle the waste in the United States; and

(iv) Retain one copy of the manifest and rail shipping paper in accordance with 40 CFR 263.22.

(2) Rail transporters must ensure that a shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator certification and signatures) and, for exports, an EPA Acknowledgment of Consent accompanies the hazardous waste at all times. Intermediate rail transporters are not required to sign either the manifest or shipping paper.

(3) When delivering hazardous waste to the designated facility, a rail transporter must:

(i) Obtain the date of delivery and handwritten signature of the owner or operator of the designated facility on the manifest or the shipping paper (if the manifest has not been received by the facility); and

(ii) Retain a copy of the manifest or signed shipping paper in accordance with 40 CFR 263.22.

(4) When delivering hazardous waste to a non-rail transporter, a rail transporter must:

(i) Obtain the date of delivery and the handwritten signature of the next non-rail transporter on the manifest; and

(ii) Retain a copy of the manifest in accordance with 40 CFR 263.22.

49 CFR Ch. I (10–1–10 Edition)

(5) Before accepting hazardous waste from a rail transporter, a non-rail transporter must sign and date the manifest and provide a copy to the rail transporter.

(g) The person delivering a hazardous waste to an initial rail carrier shall send a copy of the manifest, dated and signed by a representative of the rail carrier, to the person representing the designated facility.

(h) A hazardous waste manifest required by 40 CFR part 262, containing all of the information required by this subpart, may be used as the shipping paper required by this subpart.

(i) The shipping description for a hazardous waste must be modified as required by § 172.101(c)(9).

[Amdt. 172–58, 45 FR 34698, May 22, 1980, as amended by Amdt. 172–90, 49 FR 10510, Mar. 20, 1984; 49 FR 11184, Mar. 26, 1984; Amdt. 172–248, 61 FR 28675, June 5, 1996; 70 FR 34075, June 13, 2005]

Subpart D—Marking

§ 172.300 Applicability.

(a) Each person who offers a hazardous material for transportation shall mark each package, freight container, and transport vehicle containing the hazardous material in the manner required by this subpart.

(b) When assigned the function by this subpart, each carrier that transports a hazardous material shall mark each package, freight container, and transport vehicle containing the hazardous material in the manner required by this subpart.

[Amdt. 172–101, 45 FR 74666, Nov. 10, 1980]

§ 172.301 General marking requirements for non-bulk packagings.

(a) *Proper shipping name and identification number.* (1) Except as otherwise provided by this subchapter, each person who offers a hazardous material for transportation in a non-bulk packaging must mark the package with the proper shipping name and identification number (preceded by “UN” or “NA,” as appropriate) for the material as shown in the § 172.101 Table. Identification numbers are not required on packagings that contain only ORM-D materials or limited quantities, as defined

in §171.8 of this subchapter, except for limited quantities marked in accordance with the marking requirements in §172.315.

(2) The proper shipping name for a hazardous waste (as defined in §171.8 of this subchapter) is not required to include the word "waste" if the package bears the EPA marking prescribed by 40 CFR 262.32.

(3) *Large quantities of a single hazardous material in non-bulk packages.* A transport vehicle or freight container containing only a single hazardous material in non-bulk packages must be marked, on each side and each end as specified in the §172.332 or §172.336, with the identification number specified for the hazardous material in the §172.101 Table, subject to the following provisions and limitations:

(i) Each package is marked with the same proper shipping name and identification number;

(ii) The aggregate gross weight of the hazardous material is 4,000 kg (8,820 pounds) or more;

(iii) All of the hazardous material is loaded at one loading facility;

(iv) The transport vehicle or freight container contains no other material, hazardous or otherwise; and

(v) The identification number marking requirement of this paragraph (a)(3) does not apply to Class 1, Class 7, or to non-bulk packagings for which identification numbers are not required.

(b) *Technical names.* In addition to the marking required by paragraph (a) of this section, each non-bulk packaging containing a hazardous material subject to the provisions of §172.203(k) of this part, except for a Division 6.2 material, must be marked with the technical name in parentheses in association with the proper shipping name in accordance with the requirements and exceptions specified for display of technical descriptions on shipping papers in §172.203(k) of this part. A technical name should not be marked on the outer package of a Division 6.2 material.

(c) *Special permit packagings.* Except as provided in §173.23 of this subchapter, the outside of each package authorized by a special permit must be plainly and durably marked "DOT-SP" followed by the special permit number

assigned. Packages authorized by an exemption issued prior to October 1, 2007, may be plainly and durably marked "DOT-E" in lieu of "DOT-SP" followed by the number assigned as specified in the most recent version of that exemption.

(d) *Consignee's or consignor's name and address.* Each person who offers for transportation a hazardous material in a non-bulk package shall mark that package with the name and address of the consignor or consignee except when the package is—

(1) Transported by highway only and will not be transferred from one motor carrier to another; or

(2) Part of a carload lot, truckload lot or freight container load, and the entire contents of the rail car, truck or freight container are shipped from one consignor to one consignee.

(e) *Previously marked packagings.* A package which has been previously marked as required for the material it contains and on which the marking remains legible, need not be remarked. (For empty packagings, see §173.29 of this subchapter.)

(f) *NON-ODORIZED marking on cylinders containing LPG.* After September 30, 2006, no person may offer for transportation or transport a specification cylinder, except a Specification 2P or 2Q container or a Specification 39 cylinder, that contains an unodorized liquefied petroleum gas (LPG) unless it is legibly marked NON-ODORIZED or NOT ODORIZED in letters not less than 6.3 mm (0.25 inches) in height near the marked proper shipping name required by paragraph (a) of this section.

[Amdt. 172-123, 55 FR 52590, Dec. 21, 1990, as amended by Amdt. 172-151, 62 FR 1227, Jan. 8, 1997; 62 FR 39404, July 22, 1997; 63 FR 16075, Apr. 1, 1998; 66 FR 45182, Aug. 28, 2001; 68 FR 45030, July 31, 2003; 69 FR 64471, Nov. 4, 2004; 70 FR 73164, Dec. 9, 2005; 71 FR 32258, June 2, 2006]

§ 172.302 General marking requirements for bulk packagings.

(a) *Identification numbers.* Except as otherwise provided in this subpart, no person may offer for transportation or transport a hazardous material in a bulk packaging unless the packaging is marked as required by §172.332 with the

§ 172.303

identification number specified for the material in the §172.101 table—

(1) On each side and each end, if the packaging has a capacity of 3,785 L (1,000 gallons) or more;

(2) On two opposing sides, if the packaging has a capacity of less than 3,785 L (1,000 gallons); or

(3) For cylinders permanently installed on a tube trailer motor vehicle, on each side and each end of the motor vehicle.

(b) *Size of markings.* Except as otherwise provided, markings required by this subpart on bulk packagings must—

(1) Have a width of at least 6.0 mm (0.24 inch) and a height of at least 100 mm (3.9 inches) for rail cars;

(2) Have a width of at least 4.0 mm (0.16 inch) and a height of at least 25 mm (one inch) for portable tanks with capacities of less than 3,785 L (1,000 gallons) and IBCs; and

(3) Have a width of at least 6.0 mm (0.24 inch) and a height of at least 50 mm (2.0 inches) for cargo tanks and other bulk packagings.

(c) *Special permit packagings.* Except as provided in §173.23 of this subchapter, the outside of each package used under the terms of a special permit must be plainly and durably marked “DOT-SP” followed by the special permit number assigned. Packages authorized by an exemption issued prior to October 1, 2007 may be plainly and durably marked “DOT-E” in lieu of “DOT-SP” followed by the number assigned as specified in the most recent version of that exemption.

(d) Each bulk packaging marked with a proper shipping name, common name or identification number as required by this subpart must remain marked when it is emptied unless it is—

(1) Sufficiently cleaned of residue and purged of vapors to remove any potential hazard; or

(2) Refilled, with a material requiring different markings or no markings, to such an extent that any residue remaining in the packaging is no longer hazardous.

(e) Additional requirements for marking portable tanks, cargo tanks, tank cars, multi-unit tank car tanks, and other bulk packagings are pre-

49 CFR Ch. I (10–1–10 Edition)

scribed in §§172.326, 172.328, 172.330, and 172.331, respectively, of this subpart.

(f) A bulk packaging marked prior to October 1, 1991, in conformance to the regulations of this subchapter in effect on September 30, 1991, need not be re-marked if the key words of the proper shipping name are identical to those currently specified in the §172.101 table. For example, a tank car marked “NITRIC OXIDE” need not be re-marked “NITRIC OXIDE, COMPRESSED”.

(g) A rail car, freight container, truck body or trailer in which the lading has been fumigated with any hazardous material, or is undergoing fumigation, must be marked as specified in §173.9 of this subchapter.

[Amdt. 172–123, 55 FR 52591, Dec. 21, 1990, as amended at 56 FR 66254, Dec. 20, 1991; Amdt. 172–150, 61 FR 50624, Sept. 26, 1996; Amdt. 172–151, 62 FR 1228, Jan. 8, 1997; 62 FR 39398, July 22, 1997; 66 FR 45379, Aug. 28, 2001; 70 FR 73164, Dec. 9, 2005; 72 FR 55692, Oct. 1, 2007]

§ 172.303 Prohibited marking.

(a) No person may offer for transportation or transport a package which is marked with the proper shipping name, the identification number of a hazardous material or any other markings indicating that the material is hazardous (e.g., RQ, INHALATION HAZARD) unless the package contains the identified hazardous material or its residue.

(b) This section does not apply to—

(1) Transportation of a package in a transport vehicle or freight container if the package is not visible during transportation and is loaded by the shipper and unloaded by the shipper or consignee.

(2) Markings on a package which are securely covered in transportation.

(3) The marking of a shipping name on a package when the name describes a material not regulated under this subchapter.

[Amdt. 172–123, 55 FR 52591, Dec. 21, 1990, as amended at 56 FR 66254, Dec. 20, 1991; 72 FR 55692, Oct. 1, 2007]

§ 172.304 Marking requirements.

(a) The marking required in this subpart—

(1) Must be durable, in English and printed on or affixed to the surface of a package or on a label, tag, or sign.

(2) Must be displayed on a background of sharply contrasting color;

(3) Must be unobscured by labels or attachments; and

(4) Must be located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

(b) [Reserved]

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-29B, 41 FR 57067, Dec. 30, 1976]

§ 172.306 [Reserved]

§ 172.308 Authorized abbreviations.

(a) Abbreviations may not be used in a proper shipping name marking except as authorized in this section.

(b) The abbreviation "ORM" may be used in place of the words "Other Regulated Material."

(c) Abbreviations which appear as authorized descriptions in column 2 of the § 172.101 table (e.g., "TNT" and "PCB") are authorized.

[Amdt. 172-123, 55 FR 52591, Dec. 21, 1990, as amended by Amdt. 172-145, 60 FR 49110, Sept. 21, 1995]

§ 172.310 Class 7 (radioactive) materials.

In addition to any other markings required by this subpart, each package containing Class 7 (radioactive) materials must be marked as follows:

(a) Each package with a gross mass greater than 50 kg (110 lb) must have its gross mass including the unit of measurement (which may be abbreviated) marked on the outside of the package.

(b) Each industrial, Type A, Type B(U), or Type B(M) package must be legibly and durably marked on the outside of the packaging, in letters at least 13 mm (0.5 in) high, with the words "TYPE IP-1," "TYPE IP-2," "TYPE IP-3," "TYPE A," "TYPE B(U)" or "TYPE B(M)," as appropriate. A package which does not conform to Type IP-1, Type IP-2, Type IP-3, Type A, Type B(U) or Type B(M) requirements may not be so marked.

(c) Each package which conforms to an IP-1, IP-2, IP-3 or a Type A package

design must be legibly and durably marked on the outside of the packaging with the international vehicle registration code of the country of origin of the design. The international vehicle registration code for packages designed by a United States company or agency is the symbol "USA."

(d) Each package which conforms to a Type B(U) or Type B(M) package design must have the outside of the outermost receptacle, which is resistant to the effects of fire and water, plainly marked by embossing, stamping or other means resistant to the effects of fire and water with a radiation symbol that conforms to the requirements of Appendix B of this part.

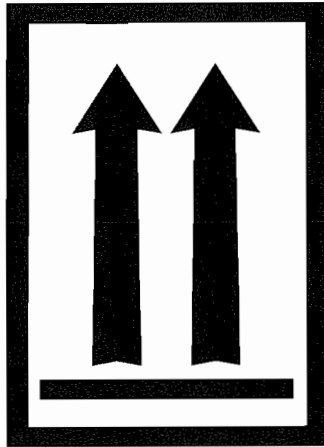
(e) Each Type B(U), Type B(M) or fissile material package destined for export shipment must also be marked "USA" in conjunction with the specification marking, or other package certificate identification. (See §§ 173.471, 173.472, and 173.473 of this subchapter.)

[Docket No. RSPA-99-6283 (HM-230), 69 FR 3668, Jan. 26, 2004]

§ 172.312 Liquid hazardous materials in non-bulk packagings.

(a) Except as provided in this section, each non-bulk combination package having inner packagings containing liquid hazardous materials, single packaging fitted with vents, or open cryogenic receptacle intended for the transport of refrigerated liquefied gases must be:

- (1) Packed with closures upward, and
- (2) Legibly marked with package orientation markings that are similar to the illustration shown in this paragraph, on two opposite vertical sides of the package with the arrows pointing in the correct upright direction. The arrows must be either black or red on white or other suitable contrasting background and commensurate with the size of the package. Depicting a rectangular border around the arrows is optional.



Package orientation

(b) Arrows for purposes other than indicating proper package orientation may not be displayed on a package containing a liquid hazardous material.

(c) The requirements of paragraph (a) of this section do not apply to—

(1) A non-bulk package with inner packagings which are cylinders.

(2) Except when offered or intended for transportation by aircraft, packages containing flammable liquids in inner packagings of 1 L or less prepared in accordance with §173.150 (b) or (c) of this subchapter.

(3) When offered or intended for transportation by aircraft, packages containing flammable liquids in inner packagings of 120 mL (4 fluid oz.) or less prepared in accordance with §173.150 (b) or (c) of this subchapter when packed with sufficient absorption material between the inner and outer packagings to completely absorb the liquid contents.

(4) Liquids contained in manufactured articles (e.g., alcohol or mercury in thermometers) which are leak-tight in all orientations.

(5) A non-bulk package with hermetically sealed inner packagings.

(6) Packages containing liquid infectious substances in primary receptacles not exceeding 50 mL (1.7 oz.).

(7) Class 7 radioactive material in Type A, IP-2, IP-3, Type B(U), or Type B(M) packages.

[Amdt. 172-123, 55 FR 52591, Dec. 21, 1990, as amended at 56 FR 66254, Dec. 20, 1991; 57 FR 45458, Oct. 1, 1992; 64 FR 51918, Sept. 27, 1999; 66 FR 45379, Aug. 28, 2001; 68 FR 45030, July 31, 2003; 71 FR 54395, Sept. 14, 2006; 71FR 78627, Dec. 29, 2006]

§ 172.313 Poisonous hazardous materials.

In addition to any other markings required by this subpart:

(a) A material poisonous by inhalation (see §171.8 of this subchapter) shall be marked “Inhalation Hazard” in association with the required labels or placards, as appropriate, and shipping name when required. The marking must be on two opposing sides of a bulk packaging. (See §172.302(b) of this subpart for size of markings on bulk packages.) When the words “Inhalation Hazard” appear on the label, as prescribed in §§172.416 and 172.429, or placard, as prescribed in §§172.540 and 172.555, the “Inhalation Hazard” marking is not required on the package.

(b) Each non-bulk plastic outer packaging used as a single or composite packaging for materials meeting the definition of Division 6.1 (in §173.132 of this subchapter) shall be permanently marked, by embossment or other durable means, with the word “POISON” in letters at least 6.3 mm (0.25 inch) in height. Additional text or symbols related to hazard warning may be included in the marking. The marking shall be located within 150 mm (6 inches) of the closure of the packaging.

(c) A transport vehicle or freight container containing a material poisonous by inhalation in non-bulk packages shall be marked, on each side and each end as specified in §172.332 or §172.336, with the identification number specified for the hazardous material in the §172.101 table, subject to the following provisions and limitations:

(1) The material is in Hazard Zone A or B;

(2) The transport vehicle or freight container is loaded at one facility with 1,000 kg (2,205 pounds) or more aggregate gross weight of the material in non-bulk packages marked with the

same proper shipping name and identification number; and

(3) If the transport vehicle or freight container contains more than one material meeting the provisions of this paragraph (c), it shall be marked with the identification number for one material, determined as follows:

(i) For different materials in the same hazard zone, with the identification number of the material having the greatest aggregate gross weight; and

(ii) For different materials in both Hazard Zones A and B, with the identification number for the Hazard Zone A material.

(d) For a packaging containing a Division 6.1 PG III material, "PG III" may be marked adjacent to the POISON label. (See § 172.405(c).)

[Amdt. 172-123, 55 FR 52592, Dec. 21, 1990, as amended at 57 FR 46624, Oct. 9, 1992; Amdt. 172-151, 62 FR 1228, Jan. 8, 1997; 62 FR 39398, 39405, July 22, 1997; 63 FR 16075, Apr. 1, 1998; 64 FR 10776, Mar. 5, 1999]

§ 172.315 Packages containing limited quantities.

Except for transportation by aircraft or as otherwise provided in this subchapter, a package containing a limited quantity of hazardous materials is not required to be marked with the proper shipping name provided it is marked with the identification (ID) number, preceded by the letters "UN" or "NA," as applicable, for the entry as shown in the § 172.101 Table, and placed within a square-on-point border in accordance with the following:

(a) The ID number marking must be durable, legible and of such a size relative to the package as to be readily visible. The width of line forming the square-on-point must be at least 2 mm and the height of the ID number must be at least 6 mm. The marking must be applied on at least one side or one end of the outer packaging.

(b) When two or more hazardous materials with different ID numbers are contained in the package, the packaging must be marked with either individual square-on-points bearing a single ID number, or a single square-on-point large enough to include each applicable ID number.

(c) As applicable, the letters "RQ" must be marked in association with

the square-on-point border containing the identification (ID) number.

[68 FR 45030, July 31, 2003, as amended at 69 FR 76153, Dec. 20, 2004; 73 FR 4716, Jan. 28, 2008]

§ 172.316 Packagings containing materials classed as ORM-D.

(a) Each non-bulk packaging containing a material classed as ORM-D must be marked on at least one side or end with the ORM-D designation immediately following or below the proper shipping name of the material. The ORM designation must be placed within a rectangle that is approximately 6.3 mm (0.25 inches) larger on each side than the designation. The designation for ORM-D must be:

(1) ORM-D-AIR for an ORM-D that is prepared for air shipment and packaged in accordance with the provisions of § 173.27 of this subchapter.

(2) ORM-D for an ORM-D other than as described in paragraph (a)(1) of this section.

(b) When the ORM-D marking including the proper shipping name can not be affixed on the package surface, it may be on an attached tag.

(c) The marking ORM-D is the certification by the person offering the packaging for transportation that the material is properly described, classed, packaged, marked and labeled (when appropriate) and in proper condition for transportation according to the applicable regulations of this subchapter. This form of certification does not preclude the requirement for a certificate on a shipping paper when required by subpart C of this part.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-123, 55 FR 52592, Dec. 21, 1990; 56 FR 66254, Dec. 20, 1991]

§ 172.317 KEEP AWAY FROM HEAT handling mark.

(a) *General.* For transportation by aircraft, each package containing self-reactive substances of Division 4.1 or organic peroxides of Division 5.2 must be marked with the KEEP AWAY FROM HEAT handling mark specified in this section.

(b) *Location and design.* The marking must be a rectangle measuring at least 105 mm (4.1 inches) in height by 74 mm (2.9 inches) in width. Markings with

§ 172.320

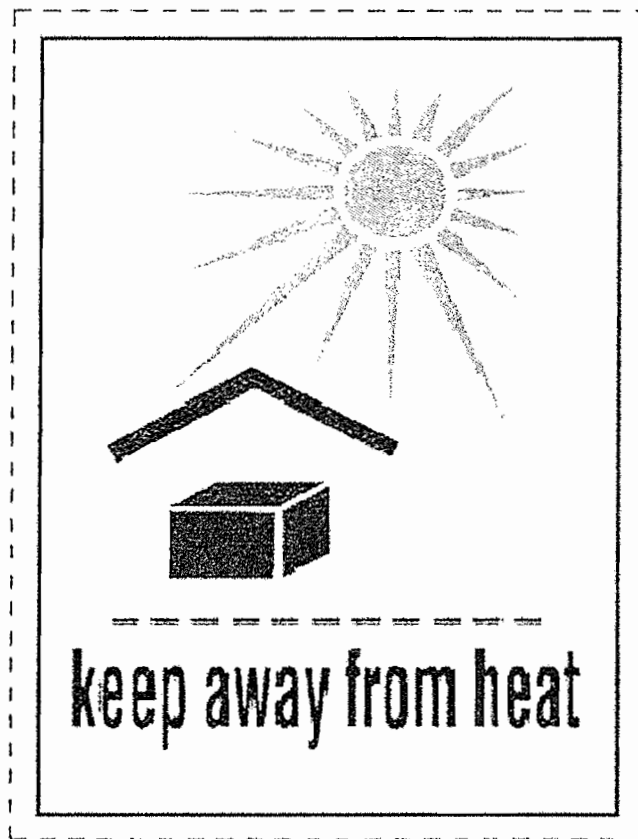
49 CFR Ch. I (10-1-10 Edition)

not less than half this dimension are permissible where the dimensions of the package can only bear a smaller mark.

(c) *KEEP AWAY FROM HEAT handling mark.* The KEEP AWAY FROM

HEAT handling mark must conform to the following:

(1) Except for size, the KEEP AWAY FROM HEAT handling mark must appear as follows:



(2) The symbol, letters and border must be black and the background white, except for the starburst which must be red.

(3) The KEEP AWAY FROM HEAT handling marking required by paragraph (a) of this section must be durable, legible and displayed on a background of contrasting color.

[69 FR 76153, Dec. 20, 2004]

§ 172.320 Explosive hazardous materials.

(a) Except as otherwise provided in paragraphs (b), (c), (d) and (e) of this section, each package containing a Class 1 material must be marked with the EX-number for each substance, article or device contained therein.

(b) Except for fireworks approved in accordance with § 173.56(j) of this subchapter, a package of Class 1 materials

may be marked, in lieu of the EX-number required by paragraph (a) of this section, with a national stock number issued by the Department of Defense or identifying information, such as a product code required by regulations for commercial explosives specified in 27 CFR part 555, if the national stock number or identifying information can be specifically associated with the EX-number assigned.

(c) When more than five different Class 1 materials are packed in the same package, the package may be marked with only five of the EX-numbers, national stock numbers, product codes, or combination thereof.

(d) The requirements of this section do not apply if the EX-number, product code or national stock number of each explosive item described under a proper shipping description is shown in association with the shipping description required by §172.202(a) of this part. Product codes and national stock numbers must be traceable to the specific EX-number assigned by the Associate Administrator.

(e) The requirements of this section do not apply to the following Class 1 materials:

(1) Those being shipped to a testing agency in accordance with §173.56(d) of this subchapter;

(2) Those being shipped in accordance with §173.56(e) of this subchapter, for the purposes of developmental testing;

(3) Those which meet the requirements of §173.56(h) of this subchapter and therefore are not subject to the approval process of §173.56 of this subchapter;

(4) [Reserved];

(5) Those that are transported in accordance with §173.56(c)(2) of this subchapter and, therefore, are covered by a national security classification currently in effect.

[Amdt. 172-123, 56 FR 66254, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67487, Dec. 29, 1994; 66 FR 45379, Aug. 28, 2001; 74 FR 53188, Oct. 16, 2009]

§ 172.322 Marine pollutants.

(a) For vessel transportation of each non-bulk packaging that contains a marine pollutant—

(1) If the proper shipping name for a material which is a marine pollutant

does not identify by name the component which makes the material a marine pollutant, the name of that component must be marked on the package in parentheses in association with the marked proper shipping name. Where two or more components which make a material a marine pollutant are present, the names of at least two of the components most predominantly contributing to the marine pollutant designation must appear in parentheses in association with the marked proper shipping name; and

(2) The MARINE POLLUTANT mark shall be placed in association with the hazard warning labels required by subpart E of this part or, in the absence of any labels, in association with the marked proper shipping name.

(b) A bulk packaging that contains a marine pollutant must—

(1) Be marked with the MARINE POLLUTANT mark on at least two opposing sides or two ends other than the bottom if the packaging has a capacity of less than 3,785 L (1,000 gallons). The mark must be visible from the direction it faces. The mark may be displayed in black lettering on a square-on-point configuration having the same outside dimensions as a placard; or

(2) Be marked on each end and each side with the MARINE POLLUTANT mark if the packaging has a capacity of 3,785 L (1,000 gallons) or more. The mark must be visible from the direction it faces. The mark may be displayed in black lettering on a square-on-point configuration having the same outside dimensions as a placard.

(c) A transport vehicle or freight container that contains a package subject to the marking requirements of paragraph (a) or (b) of this section must be marked with the MARINE POLLUTANT mark. The mark must appear on each side and each end of the transport vehicle or freight container, and must be visible from the direction it faces. This requirement may be met by the marking displayed on a freight container or portable tank loaded on a motor vehicle or rail car. This mark may be displayed in black lettering on a white square-on-point configuration having the same outside dimensions as a placard.

§ 172.323

(d) The MARINE POLLUTANT mark is not required—

(1) On single packagings or combination packagings where each single package or each inner packaging of combination packagings has:

(i) A net quantity of 5 L (1.3 gallons) or less for liquids; or

(ii) A net mass of 5 kg (11 pounds) or less for solids

(2) On a combination packaging containing a marine pollutant, other than a severe marine pollutant, in inner packagings each of which contains:

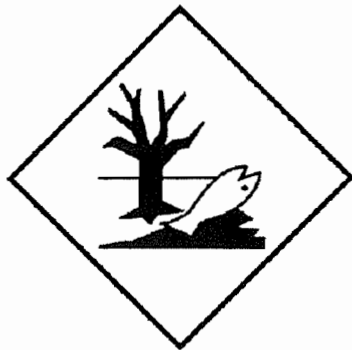
(i) 5 L (1.3 gallons) or less net capacity for liquids; or

(ii) 5 kg (11 pounds) or less net capacity for solids.

(3) Except for transportation by vessel, on a bulk packaging, freight container or transport vehicle that bears a label or placard specified in subparts E or F of this part.

(e) *MARINE POLLUTANT mark*. Effective January 14, 2010 the MARINE POLLUTANT mark must conform to the following:

(1) Except for size, the MARINE POLLUTANT mark must appear as follows:



Symbol (fish and tree): Black on white or suitable contrasting background.

(2) The symbol and border must be black and the background white, or the symbol, border and background must be of contrasting color to the surface to which the mark is to be affixed. Each side of the mark must be—

(i) At least 100 mm (4 inches) for marks applied to:

49 CFR Ch. I (10–1–10 Edition)

(A) Non-bulk packages, except in the case of packages which, because of their size, can only bear smaller marks;

(B) Bulk packages with a capacity of less than 3,785 L (1,000 gallons); or

(ii) At least 250 mm (10 inches) for marks applied to all other bulk packages.

(f) *Exceptions*. See § 171.4(c).

[Amdt. 172-127, 57 FR 52938, Nov. 5, 1992, as amended by Amdt. 172-136, 59 FR 38064, July 26, 1994; Amdt. 172-145, 60 FR 49110, Sept. 21, 1995; 66 FR 45379, Aug. 28, 2001; 70 FR 56098, Sept. 23, 2005; 74 FR 2252, Jan. 14, 2009]

§ 172.323 Infectious substances.

(a) In addition to other requirements of this subpart, after September 30, 2003, a bulk packaging containing a regulated medical waste, as defined in § 173.134(a)(5) of this subchapter, must be marked with a BIOHAZARD marking conforming to 29 CFR 1910.1030(g)(1)(i)—

(1) On two opposing sides or two ends other than the bottom if the packaging has a capacity of less than 3,785 L (1,000 gallons). The BIOHAZARD marking must measure at least 152.4 mm (6 inches) on each side and must be visible from the direction it faces.

(2) On each end and each side if the packaging has a capacity of 3,785 L (1,000 gallons) or more. The BIOHAZARD marking must measure at least 152.4 mm (6 inches) on each side and must be visible from the direction it faces.

(b) For a bulk packaging contained in or on a transport vehicle or freight container, if the BIOHAZARD marking on the bulk packaging is not visible, the transport vehicle or freight container must be marked as required by paragraph (a) of this section on each side and each end.

(c) The background color for the BIOHAZARD marking required by paragraph (a) of this section must be orange and the symbol and letters must be black. Except for size the BIOHAZARD marking must appear as follows:



(d) The BIOHAZARD marking required by paragraph (a) of this section must be displayed on a background of contrasting color. It may be displayed on a plain white square-on-point configuration having the same outside dimensions as a placard, as specified in §172.519(c) of this part.

[67 FR 53135, Aug. 14, 2002]

§ 172.324 Hazardous substances in non-bulk packagings.

For each non-bulk package that contains a hazardous substance—

(a) Except for packages of radioactive material labeled in accordance with §172.403, if the proper shipping name of a material that is a hazardous substance does not identify the hazardous substance by name, or if the package contains a limited quantity marked in accordance with §172.315,

§ 172.325

49 CFR Ch. I (10–1–10 Edition)

the name of the hazardous substance must be marked on the package, in parentheses, in association with the proper shipping name or the identification number as applicable. If the material contains two or more hazardous substances, at least two hazardous substances, including the two with the lowest reportable quantities (RQs), must be identified. For a hazardous waste, the waste code (e.g., D001), if appropriate, may be used to identify the hazardous substance.

(b) The letters "RQ" must be marked on the package in association with the proper shipping name or the identification number displayed in accordance with § 172.315.

[73 FR 4716, Jan. 28, 2008]

§ 172.325 Elevated temperature materials.

(a) Except as provided in paragraph (b) of this section, a bulk packaging containing an elevated temperature material must be marked on two op-

posing sides with the word "HOT" in black or white Gothic lettering on a contrasting background. The marking must be displayed on the packaging itself or in black lettering on a plain white square-on-point configuration having the same outside dimensions as a placard. (See § 172.302(b) for size of markings on bulk packagings.)

(b) Bulk packagings containing molten aluminum or molten sulfur must be marked "MOLTEN ALUMINUM" or "MOLTEN SULFUR", respectively, in the same manner as prescribed in paragraph (a) of this section.

(c) If the identification number is displayed on a white-square-on-point display configuration, as prescribed in § 172.336(b), the word "HOT" may be displayed in the upper corner of the same white-square-on-point display configuration. The word "HOT" must be in black letters having a height of at least 50 mm (2.0 inches). Except for size, these markings shall be as illustrated for an Elevated temperature material, liquid, n.o.s.:



[Amdt. 172-125, 58 FR 3348, Jan. 8, 1993, as amended by Amdt. 172-139, 59 FR 67487, Dec. 29, 1994]

§ 172.326 Portable tanks.

(a) *Shipping name.* No person may offer for transportation or transport a portable tank containing a hazardous material unless it is legibly marked on two opposing sides with the proper shipping name specified for the material in the § 172.101 table.

(b) *Owner's name.* The name of the owner or of the lessee, if applicable, must be displayed on a portable tank that contains a hazardous material.

(c) *Identification numbers.* (1) If the identification number markings required by § 172.302(a) are not visible, a transport vehicle or freight container used to transport a portable tank con-

taining a hazardous material must be marked on each side and each end as required by § 172.332 with the identification number specified for the material in the § 172.101 table.

(2) Each person who offers a portable tank containing a hazardous material to a motor carrier, for transportation in a transport vehicle or freight container, shall provide the motor carrier with the required identification numbers on placards, orange panels, or the white square-on-point configuration, as appropriate, for each side and each end of the transport vehicle or freight container from which identification numbers on the portable tank are not visible.

§ 172.328

49 CFR Ch. I (10–1–10 Edition)

(d) *NON-ODORIZED marking on portable tanks containing LPG.* After September 30, 2006, no person may offer for transportation or transport a portable tank containing liquefied petroleum gas (LPG) that is unodorized as authorized in §173.315(b)(1) unless it is legibly marked NON-ODORIZED or NOT ODORIZED on two opposing sides near the marked proper shipping name required by paragraph (a) of this section, or near the placards.

[Amdt. 172–123, 55 FR 52592, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; 69 FR 64471, Nov. 4, 2004]

§ 172.328 **Cargo tanks.**

(a) *Providing and affixing identification numbers.* Unless a cargo tank is already marked with the identification numbers required by this subpart, the identification numbers must be provided or affixed as follows:

(1) A person who offers a hazardous material to a motor carrier for transportation in a cargo tank shall provide the motor carrier the identification numbers on placards or shall affix orange panels containing the required identification numbers, prior to or at the time the material is offered for transportation.

(2) A person who offers a cargo tank containing a hazardous material for transportation shall affix the required identification numbers on panels or placards prior to or at the time the cargo tank is offered for transportation.

(3) For a cargo tank transported on or in a transport vehicle or freight container, if the identification number marking on the cargo tank required by §172.302(a) would not normally be visible during transportation—

(i) The transport vehicle or freight container must be marked as required by §172.332 on each side and each end with the identification number specified for the material in the §172.101 table; and

(ii) When the cargo tank is permanently installed within an enclosed cargo body of the transport vehicle or freight container, the identification number marking required by §172.302(a) need only be displayed on each side and end of a cargo tank that is visible when the cargo tank is accessed.

(b) *Required markings: Gases.* Except for certain nurse tanks which must be marked as specified in §173.315(m) of this subchapter, each cargo tank transporting a Class 2 material subject to this subchapter must be marked, in lettering no less than 50 mm (2.0 inches), on each side and each end with—

(1) The proper shipping name specified for the gas in the §172.101 table; or

(2) An appropriate common name for the material (e.g., “Refrigerant Gas”).

(c) *QT/NQT markings.* Each MC 330 and MC 331 cargo tank must be marked near the specification plate, in letters no less than 50 mm (2.0 inches) in height, with—

(1) “QT”, if the cargo tank is constructed of quenched and tempered steel; or

(2) “NQT”, if the cargo tank is constructed of other than quenched and tempered steel.

(d) After October 3, 2005, each on-vehicle manually-activated remote shut-off device for closure of the internal self-closing stop valve must be identified by marking “Emergency Shutoff” in letters at least 0.75 inches in height, in a color that contrasts with its background, and located in an area immediately adjacent to the means of closure.

(e) *NON-ODORIZED marking on cargo tanks containing LPG.* After September 30, 2006, no person may offer for transportation or transport a cargo tank containing liquefied petroleum gas (LPG) that is unodorized as authorized in §173.315(b)(1) unless it is legibly marked NON-ODORIZED or NOT ODORIZED on two opposing sides near the marked proper shipping name as specified in paragraph (b)(1) of this section, or near the placards.

[Amdt. 172–123, 55 FR 52592, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; Amdt. 172–151, 62 FR 1228, Jan. 8, 1997; 62 FR 39045, July 22, 1997; 68 FR 19277, Apr. 18, 2003; 69 FR 64471, Nov. 4, 2004]

§ 172.330 **Tank cars and multi-unit tank car tanks.**

(a) *Shipping name and identification number.* No person may offer for transportation or transport a hazardous material—

(1) In a tank car unless the following conditions are met:

(i) The tank car must be marked on each side and each end as required by § 172.302 with the identification number specified for the material in the § 172.101 table; and

(ii) A tank car containing any of the following materials must be marked on each side with the key words of the proper shipping name specified for the material in the § 172.101 table, or with a common name authorized for the material in this subchapter (e.g., "Refrigerant Gas"):

Acrolein, stabilized
 Ammonia, anhydrous, liquefied
 Ammonia solutions (more than 50% ammonia)
 Bromine *or* Bromine solutions
 Bromine chloride
 Chloroprene, stabilized
 Dispersant gas *or* Refrigerant gas (as defined in § 173.115 of this subchapter)
 Division 2.1 materials
 Division 2.2 materials (in Class DOT 107 tank cars only)
 Division 2.3 materials
 Formic acid
 Hydrocyanic acid, aqueous solutions
 Hydrofluoric acid, solution
 Hydrogen cyanide, stabilized (less than 3% water)
 Hydrogen fluoride, anhydrous
 Hydrogen peroxide, aqueous solutions (greater than 20% hydrogen peroxide)
 Hydrogen peroxide, stabilized
 Hydrogen peroxide and peroxyacetic acid mixtures
 Nitric acid (other than red fuming)
 Phosphorus, amorphous
 Phosphorus, white dry *or* Phosphorus, white, under water *or* Phosphorus white, in solution, *or* Phosphorus, yellow dry *or* Phosphorus, yellow, under water *or* Phosphorus, yellow, in solution
 Phosphorus white, molten
 Potassium nitrate and sodium nitrate mixtures
 Potassium permanganate
 Sulfur trioxide, stabilized
 Sulfur trioxide, uninhibited

(2) In a multi-unit tank car tank, unless the tank is marked on two opposing sides, in letters and numerals no less than 50 mm (2.0 inches) high—

(i) With the proper shipping name specified for the material in the § 172.101 table or with a common name authorized for the material in this subchapter (e.g., "Refrigerant Gas"); and

(ii) With the identification number specified for the material in the § 172.101 table, unless marked in accord-

ance with §§ 172.302(a) and 172.332 of this subpart.

(b) A motor vehicle or rail car used to transport a multi-unit tank car tank containing a hazardous material must be marked on each side and each end, as required by § 172.332, with the identification number specified for the material in the § 172.101 table.

(c) After September 30, 2006, no person may offer for transportation or transport a tank car or multi-unit tank car tank containing liquefied petroleum gas (LPG) that is unodorized unless it is legibly marked NON-ODORIZED or NOT ODORIZED on two opposing sides near the marked proper shipping name required by paragraphs (a)(1) and (a)(2) of this section, or near the placards. The NON-ODORIZED or NOT ODORIZED marking may appear on a tank car or multi-unit tank car tank used for both unodorized and odorized LPG.

[Amdt. 172-123, 55 FR 52593, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; 57 FR 45458, Oct. 1, 1992; Amdt. 172-148, 61 FR 28676, June 5, 1996; Amdt. 172-148, 61 FR 50254, Sept. 25, 1996; 66 FR 33425, June 21, 2001; 69 FR 64471, Nov. 4, 2004]

§ 172.331 Bulk packagings other than portable tanks, cargo tanks, tank cars and multi-unit tank car tanks.

(a) Each person who offers a hazardous material to a motor carrier for transportation in a bulk packaging shall provide the motor carrier with the required identification numbers on placards or plain white square-on-point display configurations, as authorized, or shall affix orange panels containing the required identification numbers to the packaging prior to or at the time the material is offered for transportation, unless the packaging is already marked with the identification number as required by this subchapter.

(b) Each person who offers a bulk packaging containing a hazardous material for transportation shall affix to the packaging the required identification numbers on orange panels, square-on-point configurations or placards, as appropriate, prior to, or at the time the packaging is offered for transportation unless it is already marked with identification numbers as required by this subchapter.

§ 172.332

(c) For a bulk packaging contained in or on a transport vehicle or freight container, if the identification number marking on the bulk packaging (e.g., an IBC) required by § 172.302(a) is not visible, the transport vehicle or freight container must be marked as required by § 172.332 on each side and each end with the identification number specified for the material in the § 172.101 table.

[Amdt. 172–123, 55 FR 52593, Dec. 21, 1994, as amended by Amdt. 172–151, 62 FR 1228, Jan. 8, 1997; 62 FR 39398, July 22, 1997]

§ 172.332 Identification number markings.

(a) *General.* When required by § 172.301, § 172.302, § 172.313, § 172.326, § 172.328, § 172.330, or § 172.331, identification number markings must be displayed on orange panels or placards as specified in this section, or on white square-on-point configurations as prescribed in § 172.336(b).

(b) *Orange panels.* Display of an identification number on an orange panel shall be in conformance with the following:

(1) The orange panel must be 160 mm (6.3 inches) high by 400 mm (15.7 inches) wide with a 15 mm (0.6 inches) black outer border. The identification number shall be displayed in 100 mm (3.9 inches) black Helvetica Medium numerals on the orange panel. Measurements may vary from those specified plus or minus 5 mm (0.2 inches).

(2) The orange panel may be made of any durable material prescribed for placards in § 172.519, and shall be of the orange color specified for labels or placards in appendix A to this part.

(3) The name and hazard class of a material may be shown in the upper left border of the orange panel in letters not more than 18 points (0.25 in.) high.

(4) Except for size and color, the orange panel and identification numbers shall be as illustrated for Liquefied petroleum gas:



(c) *Placards.* Display of an identification number on a hazard warning placard shall be in conformance with the following:

(1) The identification number shall be displayed across the center area of the placard in 88 mm (3.5 inches) black Alpine Gothic or Alternate Gothic No. 3 numerals on a white background 100 mm (3.9 inches) high and approximately 215 mm (8.5 inches) wide and may be outlined with a solid or dotted line border.

(2) The top of the 100 mm (3.9 inches) high white background shall be approximately 40 mm (1.6 inches) above the placard horizontal center line.

(3) An identification number may be displayed only on a placard corresponding to the primary hazard class of the hazardous material.

(4) For a COMBUSTIBLE placard used to display an identification number, the entire background below the white background for the identification number must be white during transportation by rail and may be white during transportation by highway.

(5) The name of the hazardous material and the hazard class may be shown in letters not more than 18 points high immediately within the upper border of the space on the placard bearing the identification number of the material.

(6) If an identification number is placed over the word(s) on a placard, the word(s) should be substantially covered to maximize the effectiveness of the identification number.

(d) Except for size and color, the display of an identification number on a placard shall be as illustrated for Acetone:



[Amdt. 172-101, 45 FR 74667, Nov. 10, 1980, as amended by Amdt. 172-81, 48 FR 28099, June 20, 1983; Amdt. 172-110, 52 FR 29527, Aug. 10, 1987; Amdt. 172-123, 55 FR 52593, Dec. 21, 1990; 56 FR 66255, Dec. 20, 1991; Amdt. 172-151, 62 FR 1228, Jan. 8, 1997; 65 FR 50459, Aug. 18, 2000; 68 FR 57632, Oct. 6, 2003]

§ 172.334 Identification numbers; prohibited display.

(a) No person may display an identification number on a RADIOACTIVE, EXPLOSIVES 1.1, 1.2, 1.3, 1.4, 1.5 or 1.6, DANGEROUS, or subsidiary hazard placard.

(b) No person may display an identification number on a placard, orange panel or white square-on-point display configuration unless—

(1) The identification number is specified for the material in § 172.101;

(2) The identification number is displayed on the placard, orange panel or white square-on-point configuration authorized by § 172.332 or § 172.336(b), as appropriate, and any placard used for display of the identification number corresponds to the hazard class of the material specified in § 172.504;

(3) Except as provided under § 172.336(c)(4) or (c)(5), the package, freight container, or transport vehicle on which the number is displayed contains the hazardous material associated with that identification number in § 172.101.

(c) Except as required by § 172.332(c)(4) for a combustible liquid, the identification number of a material may be displayed only on the placards required by the tables in § 172.504.

(d) Except as provided in § 172.336, a placard bearing an identification number may not be used to meet the requirements of subpart F of this part

unless it is the correct identification number for all hazardous materials of the same class in the transport vehicle or freight container on which it is displayed.

(e) Except as specified in § 172.338, an identification number may not be displayed on an orange panel on a cargo tank unless affixed to the cargo tank by the person offering the hazardous material for transportation in the cargo tank.

(f) If a placard is required by § 172.504, an identification number may not be displayed on an orange panel unless it is displayed in proximity to the placard.

(g) No person shall add any color, number, letter, symbol, or word other than as specified in this subchapter, to any identification number marking display which is required or authorized by this subchapter.

[Amdt. 172-101, 45 FR 74667, Nov. 10, 1980, as amended by Amdt. 172-104, 51 FR 23078, June 25, 1986; Amdt. 172-110, 52 FR 29528, Aug. 10, 1987; Amdt. 172-123, 55 FR 52593, Dec. 21, 1990; 56 FR 66255, Dec. 20, 1991; Amdt. 172-127, 59 FR 49133, Sept. 26, 1994]

§ 172.336 Identification numbers; special provisions.

(a) When not required or prohibited by this subpart, identification numbers may be displayed on a transport vehicle or a freight container in the manner prescribed by this subpart.

(b) Identification numbers, when required, must be displayed on either orange panels (see § 172.332(b)) or on a plain white square-on-point display configuration having the same outside dimensions as a placard. In addition, for materials in hazard classes for which placards are specified and identification number displays are required, but for which identification numbers may not be displayed on the placards authorized for the material (see § 172.334(a)), identification numbers must be displayed on orange panels or on the plain white square-on-point display configuration in association with the required placards. An identification number displayed on a white square-on-point display configuration is not considered to be a placard.

§ 172.338

49 CFR Ch. I (10–1–10 Edition)

(1) The 100 mm (3.9 inch) by 215 mm (8.5 inches) area containing the identification number shall be located as prescribed by §172.332 (c)(1) and (c)(2) and may be outlined with a solid or dotted line border.

(2) [Reserved]

(c) Identification numbers are not required:

(1) On the ends of a portable tank, cargo tank or tank car having more than one compartment if hazardous materials having different identification numbers are being transported therein. In such a circumstance, the identification numbers on the sides of the tank shall be displayed in the same sequence as the compartments containing the materials they identify.

(2) On a cargo tank containing only gasoline, if the cargo tank is marked "Gasoline" on each side and rear in letters no less than 50 mm (2 inches) high, or is placarded in accordance with §172.542(c).

(3) On a cargo tank containing only fuel oil, if the cargo tank is marked "Fuel Oil" on each side and rear in letters no less than 50 mm (2 inches) high, or is placarded in accordance with §172.544(c).

(4) For each of the different liquid petroleum distillate fuels, including gasoline and gasohol, in a compartmented cargo tank or tank car, if the identification number is displayed for the distillate fuel having the lowest flash point. After October 1, 2010, if a compartmented cargo tank or tank car contains such fuels together with a gasoline and alcohol fuel blend containing more than ten percent ethanol, the identification number "3475" or "1987" must also be displayed as appropriate in addition to the identification number for the liquid petroleum distillate fuel having the lowest flash point.

(5) For each of the different liquid petroleum distillate fuels, including gasoline and gasohol transported in a cargo tank, if the identification number is displayed for the liquid petroleum distillate fuel having the lowest flash point.

(6) For each of the different liquid petroleum distillate fuels, including gasoline and gasohol, transported in a cargo tank, if the identification num-

ber is displayed for the liquid petroleum distillate fuel having the lowest flash point. After October 1, 2010, if a cargo tank is used to transport a gasoline and alcohol fuel blend containing more than ten percent ethanol, the identification number "3475" must also be displayed in addition to the identification number for the liquid petroleum distillate fuel having the lowest flash point.

(7) On nurse tanks meeting the provisions of §173.315(m) of this subchapter.

[Amdt. 172–101, 45 FR 74667, Nov. 10, 1980, as amended by Amdt. 172–74, 47 FR 40365, Sept. 30, 1982; Amdt. 172–109, 52 FR 13038, Apr. 20, 1987; Amdt. 172–110, 52 FR 29528, Aug. 10, 1987; Amdt. 172–123, 55 FR 52593, Dec. 21, 1990; 56 FR 66255, Dec. 20, 1991; 65 FR 50459, Aug. 18, 2000; 73 FR 4716, Jan. 28, 2008]

§ 172.338 Replacement of identification numbers.

If more than one of the identification number markings on placards, orange panels, or white square-on-point display configurations that are required to be displayed are lost, damaged or destroyed during transportation, the carrier shall replace all the missing or damaged identification numbers as soon as practicable. However, in such a case, the numbers may be entered by hand on the appropriate placard, orange panel or white square-on-point display configuration providing the correct identification numbers are entered legibly using an indelible marking material. When entered by hand, the identification numbers must be located in the white display area specified in §172.332. This section does not preclude required compliance with the placarding requirements of subpart F of this subchapter.

[Amdt. 172–110, 52 FR 29528, Aug. 10, 1987]

Subpart E—Labeling

§ 172.400 General labeling requirements.

(a) Except as specified in §172.400a, each person who offers for transportation or transports a hazardous material in any of the following packages or containment devices, shall label the package or containment device with labels specified for the material in the §172.101 table and in this subpart:

- (1) A non-bulk package;
- (2) A bulk packaging, other than a cargo tank, portable tank, or tank car, with a volumetric capacity of less than 18 m³ (640 cubic feet), unless placarded in accordance with subpart F of this part;
- (3) A portable tank of less than 3785 L (1000 gallons) capacity, unless placarded in accordance with subpart F of this part;
- (4) A DOT Specification 106 or 110 multi-unit tank car tank, unless plac-

- arded in accordance with subpart F of this part; and
 - (5) An overpack, freight container or unit load device, of less than 18 m³ (640 cubic feet), which contains a package for which labels are required, unless placarded or marked in accordance with §172.512 of this part.
- (b) Labeling is required for a hazardous material which meets one or more hazard class definitions, in accordance with column 6 of the §172.101 table and the following table:

Hazard class or division	Label name	Label design or section reference
1.1	EXPLOSIVES 1.1	172.411
1.2	EXPLOSIVES 1.2	172.411
1.3	EXPLOSIVES 1.3	172.411
1.4	EXPLOSIVES 1.4	172.411
1.5	EXPLOSIVES 1.5	172.411
1.6	EXPLOSIVES 1.6	172.411
2.1	FLAMMABLE GAS	172.417
2.2	NONFLAMMABLE GAS	172.415
2.3	POISON GAS	172.416
3 (flammable liquid) Combustible liquid	FLAMMABLE LIQUID (none)	172.419
4.1	FLAMMABLE SOLID	172.420
4.2	SPONTANEOUSLY COMBUSTIBLE	172.422
4.3	DANGEROUS WHEN WET	172.423
5.1	OXIDIZER	172.426
5.2	ORGANIC PEROXIDE	172.427
6.1 (material poisonous by inhalation (see § 171.8 of this subchapter)).	POISON INHALATION HAZARD	172.429
6.1 (other than material poisonous by inhalation)	POISON	172.430
6.1 (inhalation hazard, Zone A or B)	POISON INHALATION HAZARD	172.429
6.1 (other than inhalation hazard, Zone A or B)	POISON	172.430
6.2	INFECTIOUS SUBSTANCE ¹	172.432
7 (see § 172.403)	RADIOACTIVE WHITE-I	172.436
7	RADIOACTIVE YELLOW-II	172.438
7	RADIOACTIVE YELLOW-III	172.440
7 (fissile radioactive material; see § 172.402)	FISSILE	172.441
7 (empty packages, see § 173.428 of this subchapter)	EMPTY	172.450
8	CORROSIVE	172.442
9	CLASS 9	172.446

¹ The ETIOLOGIC AGENT label specified in regulations of the Department of Health and Human Services at 42 CFR 72.3 may apply to packages of infectious substances.

[Amdt. 172-123, 55 FR 52593, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; Amdt. 172-151, 62 FR 1228, Jan. 8, 1997; 64 FR 10776, Mar. 5, 1999; 64 FR 51918, Sept. 27, 1999; 69 FR 3668, Jan. 26, 2004; 69 FR 64471, Nov. 4, 2004]

§ 172.400a Exceptions from labeling.

- (a) Notwithstanding the provisions of § 172.400, a label is not required on—
- (1) A Dewar flask meeting the requirements in §173.320 of this subchapter or a cylinder containing a Division 2.1, 2.2, or 2.3 material that is—
 - (i) Not overpacked; and
 - (ii) Durably and legibly marked in accordance with CGA C-7, Appendix A (IBR; see § 171.7 of this subchapter).

- (2) A package or unit of military explosives (including ammunition) shipped by or on behalf of the DOD when in—
 - (i) Freight containerload, carload or truckload shipments, if loaded and unloaded by the shipper or DOD; or
 - (ii) Unitized or palletized break-bulk shipments by cargo vessel under charter to DOD if at least one required label is displayed on each unitized or palletized load.

§ 172.401

(3) A package containing a hazardous material other than ammunition that is—

(i) Loaded and unloaded under the supervision of DOD personnel, and

(ii) Escorted by DOD personnel in a separate vehicle.

(4) A compressed gas cylinder permanently mounted in or on a transport vehicle.

(5) A freight container, aircraft unit load device or portable tank, which—

(i) Is placarded in accordance with subpart F of this part, or

(ii) Conforms to paragraph (a)(3) or (b)(3) of § 172.512.

(6) An overpack or unit load device in or on which labels representative of each hazardous material in the overpack or unit load device are visible.

(7) A package of low specific activity radioactive material and surface contaminated objects, when transported under § 173.427(a)(6)(vi) of this subchapter.

(b) Certain exceptions to labeling requirements are provided for small quantities and limited quantities in applicable sections in part 173 of this subchapter.

(c) Notwithstanding the provisions of § 172.402(a), a Division 6.1 subsidiary hazard label is not required on a package containing a Class 8 (corrosive) material which has a subsidiary hazard of Division 6.1 (poisonous) if the toxicity of the material is based solely on the corrosive destruction of tissue rather than systemic poisoning. In addition, a Division 4.1 subsidiary hazard label is not required on a package bearing a Division 4.2 label.

(d) A package containing a material poisonous by inhalation (see § 171.8 of this subchapter) in a closed transport vehicle or freight container may be excepted from the POISON INHALATION HAZARD or POISON GAS label or

49 CFR Ch. I (10–1–10 Edition)

placard, under the conditions set forth in § 171.23(b)(11) of this subchapter.

[Amdt. 172–123, 55 FR 52594, Dec. 21, 1990, as amended by Amdt. 172–132, 58 FR 50501, Sept. 27, 1993; 172–130, 58 FR 51531, Oct. 1, 1993; Amdt. 172–139, 59 FR 67490, Dec. 29, 1994; Amdt. 172–145, 60 FR 49110, Sept. 21, 1995; 63 FR 52849, Oct. 1, 1998; 64 FR 10776, Mar. 5, 1999; 65 FR 58626, Sept. 29, 2000; 66 FR 44255, Aug. 22, 2001; 68 FR 75742, Dec. 31, 2003; 69 FR 64472, Nov. 4, 2004; 72 FR 25176, May 3, 2007; 73 FR 4716, Jan. 28, 2008; 74 FR 2252, Jan. 14, 2009]

§ 172.401 Prohibited labeling.

(a) Except as otherwise provided in this section, no person may offer for transportation and no carrier may transport a package bearing a label specified in this subpart unless:

(1) The package contains a material that is a hazardous material, and

(2) The label represents a hazard of the hazardous material in the package.

(b) No person may offer for transportation and no carrier may transport a package bearing any marking or label which by its color, design, or shape could be confused with or conflict with a label prescribed by this part.

(c) The restrictions in paragraphs (a) and (b) of this section, do not apply to packages labeled in conformance with:

(1) The UN Recommendations (IBR, see § 171.7 of this subchapter);

(2) The IMDG Code (IBR, see § 171.7 of this subchapter);

(3) The ICAO Technical Instructions (IBR, see § 171.7 of this subchapter);

(4) The TDG Regulations (IBR, see § 171.7 of this subchapter).

(5) The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (IBR, see § 171.7 of this subchapter).

(d) The provisions of paragraph (a) of this section do not apply to a packaging bearing a label if that packaging is:

(1) Unused or cleaned and purged of all residue;

(2) Transported in a transport vehicle or freight container in such a manner that the packaging is not visible during transportation; and

(3) Loaded by the shipper and unloaded by the shipper or consignee.

[Amdt. 172-9, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-75, 47 FR 44471, Oct. 7, 1982; Amdt. 172-77, 47 FR 54822, Dec. 6, 1982; Amdt. 172-94, 49 FR 38134, Sept. 27, 1984; Amdt. 172-100, 50 FR 41521, Oct. 11, 1985; Amdt. 172-123, 55 FR 52594, Dec. 21, 1990; Amdt. 172-132, 58 FR 50501, Sept. 27, 1993; 66 FR 8647, Feb. 1, 2001; 66 FR 45379, Aug. 28, 2001; 68 FR 75741, 75742, Dec. 31, 2003; 74 FR 2252, Jan. 14, 2009]

§ 172.402 Additional labeling requirements.

(a) *Subsidiary hazard labels.* Each package containing a hazardous material—

(1) Shall be labeled with primary and subsidiary hazard labels as specified in column 6 of the §172.101 table (unless excepted in paragraph (a)(2) of this section); and

(2) For other than Class 1 or Class 2 materials (for subsidiary labeling requirements for Class 1 or Class 2 materials see paragraph (e) or paragraphs (f) and (g), respectively, of this section), if not already labeled under paragraph (a)(1) of this section, shall be labeled with subsidiary hazard labels in accordance with the following table:

Subsidiary hazard level (packing group)	Subsidiary Hazard (Class or Division)						
	3	4.1	4.2	4.3	5.1	6.1	8
I	X	***	***	X	X	X	X
II	X	X	X	X	X	X	X
III	*	X	X	X	X	X	X

X—Required for all modes.
 *—Required for all modes, except for a material with a flash point at or above 38 °C (100 °F) transported by rail or highway.
 **—Reserved
 ***—Impossible as subsidiary hazard.

(b) *Display of hazard class on labels.* The appropriate hazard class or division number must be displayed in the lower corner of a primary hazard label and a subsidiary hazard label. A subsidiary label meeting the specifications of this section which were in effect on September 30, 2001, such as, a label without the hazard class or division number displayed in the lower corner of the label may continue to be used as a subsidiary label in domestic transportation by rail or highway until October 1, 2005, provided the color tolerances are maintained and are in ac-

cordance with the display requirements in this subchapter.

(c) *Cargo Aircraft Only label.* Each person who offers for transportation or transports by aircraft a package containing a hazardous material which is authorized on cargo aircraft only shall label the package with a CARGO AIRCRAFT ONLY label specified in §172.448 of this subpart.

(d) *Class 7 (Radioactive) Materials.* Except as otherwise provided in this paragraph, each package containing a Class 7 material that also meets the definition of one or more additional hazard classes must be labeled as a Class 7 material as required by §172.403 and for each additional hazard.

(1) For a package containing a Class 7 material that also meets the definition of one or more additional hazard classes, whether or not the material satisfies §173.4a(b)(7) of this subchapter, a subsidiary label is not required on the package if the material conforms to the remaining criteria in §173.4a of this subchapter.

(2) Each package or overpack containing fissile material, other than fissile-excepted material (see §173.453 of this subchapter) must bear two FISSILE labels, affixed to opposite sides of the package or overpack, which conforms to the figure shown in §172.441; such labels, where applicable, must be affixed adjacent to the labels for radioactive materials.

(e) *Class 1 (explosive) Materials.* In addition to the label specified in column 6 of the §172.101 table, each package of Class 1 material that also meets the definition for:

(1) Division 6.1, Packing Groups I or II, shall be labeled POISON or POISON INHALATION HAZARD, as appropriate.

(2) Class 7, shall be labeled in accordance with §172.403 of this subpart.

(f) *Division 2.2 materials.* In addition to the label specified in column 6 of the §172.101 table, each package of Division 2.2 material that also meets the definition for an oxidizing gas (see §171.8 of this subchapter) must be labeled OXIDIZER.

(g) *Division 2.3 materials.* In addition to the label specified in column 6 of the §172.101 table, each package of Division

§ 172.403

49 CFR Ch. I (10–1–10 Edition)

2.3 material that also meets the definition for:

- (1) Division 2.1, must be labeled Flammable Gas;
- (2) Division 5.1, must be labeled Oxidizer; and
- (3) Class 8, must be labeled Corrosive.

[Amdt. 172–123, 55 FR 52594, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; Amdt. 172–139, 59 FR 67490, Dec. 29, 1994; Amdt. 172–140, 60 FR 26805, May 18, 1995; Amdt. 172–149, 61 FR 27173, May 30, 1996; 62 FR 39405, July 22, 1997; 66 FR 33425, June 21, 2001; 69 FR 3668, Jan. 26, 2004; 74 FR 2252, Jan. 14, 2009]

§ 172.403 Class 7 (radioactive) material.

(a) Unless excepted from labeling by §§173.421 through 173.427 of this subchapter, each package of radioactive material must be labeled as provided in this section.

(b) The proper label to affix to a package of Class 7 (radioactive) material is based on the radiation level at the surface of the package and the transport index. The proper category of label must be determined in accordance with paragraph (c) of this section. The label to be applied must be the highest category required for any of the two determining conditions for the package. RADIOACTIVE WHITE-I is the lowest category and RADIOACTIVE YELLOW-III is the highest. For example, a package with a transport index of 0.8 and a maximum surface radiation level of 0.6 millisievert (60 millirem) per hour must bear a RADIOACTIVE YELLOW-III label.

(c) Category of label to be applied to Class 7 (radioactive) materials packages:

Transport index	Maximum radiation level at any point on the external surface	Label category ¹
0 ²	Less than or equal to 0.005 mSv/h (0.5 mrem/h).	WHITE-I.
More than 0 but not more than 1	Greater than 0.005 mSv/h (0.5 mrem/h) but less than or equal to 0.5 mSv/h (50 mrem/h).	YELLOW-II.
More than 1 but not more than 10	Greater than 0.5 mSv/h (50 mrem/h) but less than or equal to 2 mSv/h (200 mrem/h).	YELLOW-III.
More than 10	Greater than 2 mSv/h (200 mrem/h) but less than or equal to 10 mSv/h (1,000 mrem/h).	YELLOW-III (Must be shipped under exclusive use provisions; see 173.441(b) of this subchapter).

¹ Any package containing a "highway route controlled quantity" (§173.403 of this subchapter) must be labelled as RADIOACTIVE YELLOW-III.

² If the measured TI is not greater than 0.05, the value may be considered to be zero.

(d) *EMPTY* label. See §173.428(d) of this subchapter for EMPTY labeling requirements.

(e) *FISSILE* label. For packages required in §172.402 to bear a FISSILE label, each such label must be completed with the criticality safety index (CSI) assigned in the NRC or DOE package design approval, or in the certificate of approval for special arrangement or the certificate of approval for the package design issued by the Competent Authority for import and export shipments. For overpacks and freight containers required in §172.402 to bear a FISSILE label, the CSI on the label must be the sum of the CSIs for all of the packages contained in the overpack or freight container.

(f) Each package required by this section to be labeled with a RADIO-

ACTIVE label must have two of these labels, affixed to opposite sides of the package. (See §172.406(e)(3) for freight container label requirements).

(g) The following applicable items of information must be entered in the blank spaces on the RADIOACTIVE label by legible printing (manual or mechanical), using a durable weather resistant means of marking:

(1) *Contents*. Except for LSA-1 material, the names of the radionuclides as taken from the listing of radionuclides in §173.435 of this subchapter (symbols which conform to established radiation protection terminology are authorized, i.e., ⁹⁹Mo, ⁶⁰Co, etc.). For mixtures of radionuclides, with consideration of space available on the label, the radionuclides that must be shown must be determined in accordance with

§ 173.433(g) of this subchapter. For LSA-I material, the term "LSA-I" may be used in place of the names of the radionuclides.

(2) *Activity*. The activity in the package must be expressed in appropriate SI units (e.g., Becquerels (Bq), Terabecquerels (TBq), etc.). The activity may also be stated in appropriate customary units (Curies (Ci), milliCuries (mCi), microCuries (uCi), etc.) in parentheses following the SI units. Abbreviations are authorized. Except for plutonium-239 and plutonium-241, the weight in grams or kilograms of fissile radionuclides may be inserted instead of activity units. For plutonium-239 and plutonium-241, the weight in grams of fissile radionuclides may be inserted in addition to the activity units.

(3) *Transport index*. (see § 173.403 of this subchapter.)

(h) When one or more packages of Class 7 (radioactive) material are placed within an overpack, the overpack must be labeled as prescribed in this section, except as follows:

(1) The "contents" entry on the label may state "mixed" in place of the names of the radionuclides unless each inside package contains the same radionuclide(s).

(2) The "activity" entry on the label must be determined by adding together the number of becquerels of the Class 7 (radioactive) materials packages contained therein.

(3) For an overpack, the transport index (TI) must be determined by adding together the transport indices of the Class 7 (radioactive) materials packages contained therein, except that for a rigid overpack, the transport index (TI) may alternatively be determined by direct measurement as prescribed in § 173.403 of this subchapter under the definition for "transport index," taken by the person initially offering the packages contained within the overpack for shipment.

(4) The category of Class 7 label for the overpack must be determined from the table in § 172.403(c) using the TI derived according to paragraph (h)(3) of this section, and the maximum radiation level on the surface of the overpack.

(5) The category of the Class 7 label of the overpack, and not that of any of the packages contained therein, must be used in accordance with Table 1 of § 172.504(e) to determine when the transport vehicle must be placarded.

(6) For fissile material, the criticality safety index which must be entered on the overpack FISSILE label is the sum of the criticality safety indices of the individual packages in the overpack, as stated in the certificate of approval for the package design issued by the NRC or the U.S. Competent Authority.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 172.403, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 172.404 Labels for mixed and consolidated packaging.

(a) *Mixed packaging*. When hazardous materials having different hazard classes are packed within the same packaging, or within the same outside container or overpack as described in § 173.25 and authorized by § 173.21 of this subchapter, the packaging, outside container or overpack must be labeled as required for each class of hazardous material contained therein.

(b) *Consolidated packaging*. When two or more packages containing compatible hazardous material (see § 173.21 of this subchapter) are placed within the same outside container or overpack, the outside container or overpack must be labeled as required for each class of hazardous material contained therein.

§ 172.405 Authorized label modifications.

(a) For Classes 1, 2, 3, 4, 5, 6, and 8, text indicating a hazard (for example FLAMMABLE LIQUID) is not required on a primary or subsidiary label.

(b) For a package containing Oxygen, compressed, or Oxygen, refrigerated liquid, the OXIDIZER label specified in § 172.426 of this subpart, modified to display the word "OXYGEN" instead of "OXIDIZER", and the class number "2" instead of "5.1", may be used in place of the NON-FLAMMABLE GAS and OXIDIZER labels. Notwithstanding the provisions of paragraph (a) of this

§ 172.406

49 CFR Ch. I (10-1-10 Edition)

section, the word "OXYGEN" must appear on the label.

(c) For a package containing a Division 6.1, Packing Group III material, the POISON label specified in §172.430 may be modified to display the text "PG III" instead of "POISON" or "TOXIC" below the mid line of the label. Also see §172.313(d).

[Amdt. 172-123, 55 FR 52594, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; 57 FR 45458, Oct. 1, 1992; 64 FR 10776, Mar. 5, 1999; 66 FR 33425, June 21, 2001]

§ 172.406 Placement of labels.

(a) General. (1) Except as provided in paragraphs (b) and (e) of this section, each label required by this subpart must—

(i) Be printed on or affixed to a surface (other than the bottom) of the package or containment device containing the hazardous material; and

(ii) Be located on the same surface of the package and near the proper shipping name marking, if the package dimensions are adequate.

(2) Except as provided in paragraph (e) of this section, duplicate labeling is not required on a package or containment device (such as to satisfy redundant labeling requirements).

(b) Exceptions. A label may be printed on or placed on a securely affixed tag, or may be affixed by other suitable means to:

(1) A package that contains no radioactive material and which has dimensions less than those of the required label;

(2) A cylinder; and

(3) A package which has such an irregular surface that a label cannot be satisfactorily affixed.

(c) Placement of multiple labels. When primary and subsidiary hazard labels are required, they must be displayed next to each other. Placement conforms to this requirement if labels are within 150 mm (6 inches) of one another.

(d) Contrast with background. Each label must be printed on or affixed to a background of contrasting color, or must have a dotted or solid line outer border.

(e) Duplicate labeling. Generally, only one of each different required label must be displayed on a package. How-

ever, duplicate labels must be displayed on at least two sides or two ends (other than the bottom) of—

(1) Each package or overpack having a volume of 1.8 m³ (64 cubic feet) or more;

(2) Each non-bulk package containing a radioactive material;

(3) Each DOT 106 or 110 multi-unit tank car tank. Labels must be displayed on each end;

(4) Each portable tank of less than 3,785 L (1000 gallons) capacity;

(5) Each freight container or aircraft unit load device having a volume of 1.8 m³ (64 cubic feet) or more, but less than 18 m³ (640 cubic feet). One of each required label must be displayed on or near the closure; and

(6) An IBC having a volume of 1.8 m³ (64 cubic feet) or more.

(f) Visibility. A label must be clearly visible and may not be obscured by markings or attachments.

[Amdt. 172-123, 55 FR 52594, Dec. 21, 1990, as amended at 56 FR 66255, Dec. 20, 1991; Amdt. 172-130, 58 FR 51531, Oct. 1, 1993; 73 FR 4716, Jan. 28, 2008]

§ 172.407 Label specifications.

(a) Durability. Each label, whether printed on or affixed to a package, must be durable and weather resistant. A label on a package must be able to withstand, without deterioration or a substantial change in color, a 30-day exposure to conditions incident to transportation that reasonably could be expected to be encountered by the labeled package.

(b) Design. (1) Except for size and color, the printing, inner border, and symbol on each label must be as shown in §§172.411 through 172.448 of this subpart, as appropriate.

(2) The dotted line border shown on each label is not part of the label specification, except when used as an alternative for the solid line outer border to meet the requirements of §172.406(d) of this subpart.

(c) Size. (1) Each diamond (square-on-point) label prescribed in this subpart must be at least 100 mm (3.9 inches) on each side with each side having a solid line inner border 5.0 to 6.3 mm (0.2 to 0.25 inches) from the edge.

(2) The CARGO AIRCRAFT ONLY label must be a rectangle measuring at

least 110 mm (4.3 inches) in height by 120 mm (4.7 inches) in width. The words "CARGO AIRCRAFT ONLY" must be shown in letters measuring at least 6.3 mm (0.25 inches) in height.

(3) Except as otherwise provided in this subpart, the hazard class number, or division number, as appropriate, must be at least 6.3 mm (0.25 inches) and not greater than 12.7 mm (0.5 inches).

(4) When text indicating a hazard is displayed on a label, the label name must be shown in letters measuring at least 7.6 mm (0.3 inches) in height. For SPONTANEOUSLY COMBUSTIBLE or DANGEROUS WHEN WET labels, the words "Spontaneously" and "When Wet" must be shown in letters measuring at least 5.1 mm (0.2 inches) in height.

(5) The symbol on each label must be proportionate in size to that shown in the appropriate section of this subpart.

(d) *Color.* (1) The background color on each label must be as prescribed in §§ 172.411 through 172.448 of this subpart, as appropriate.

(2) The symbol, text, numbers, and border must be shown in black on a label except that—

(i) White may be used on a label with a one color background of green, red or blue.

(ii) White must be used for the text and class number for the CORROSIVE label.

(iii) White may be used for the symbol for the ORGANIC PEROXIDE label.

(3) Black and any color on a label must be able to withstand, without substantial change, a 72-hour fadeometer test (for a description of equipment designed for this purpose, see ASTM G 23-69 (1975) or ASTM G 26-70).

(4) (i) A color on a label, upon visual examination, must fall within the color tolerances—

(A) Displayed on color charts conforming to the technical specifications for charts set forth in table 1 or 2 in appendix A to this part; or

(B) For labels printed on packaging surfaces, specified in table 3 in appendix A to this part.

(ii) Color charts conforming to appendix A to this part are on display in Office of Hazardous Materials Safety,

Office of Hazardous Materials Standards, Room 8422, Nassif Building, 400 Seventh Street, SW., Washington DC 20590-0001.

(5) The following color standards in the PANTONE® formula guide coated/uncoated (see § 171.7(b) of this subchapter) may be used to achieve the required colors on markings and hazard warning labels and placards:

(i) For Red—Use PANTONE® 186 U

(ii) For Orange—Use PANTONE® 151 U

(iii) For Yellow—Use PANTONE® 109 U

(iv) For Green—Use PANTONE® 335 U

(v) For Blue—Use PANTONE® 285 U

(vi) For Purple—Use PANTONE® 259 U

(6) Where specific colors from the PANTONE MATCHING SYSTEM® are applied as opaque coatings, such as paint, enamel, or plastic, or where labels are printed directly on the surface of a packaging, a spectrophotometer or other instrumentation must be used to ensure a proper match with the color standards in the PANTONE® formula guide coated/uncoated for colors prescribed in paragraph (d)(5) of this section. PANTONE® is the property of Pantone, Inc.

(7) The specified label color must extend to the edge of the label in the area designated on each label, except for the CORROSIVE, RADIOACTIVE YELLOW-II, and RADIOACTIVE YELLOW-III labels on which the color must extend only to the inner border.

(e) *Form identification.* A label may contain form identification information, including the name of its maker, provided that information is printed outside the solid line inner border in no larger than 10-point type.

(f) *Exceptions.* Except for materials poisonous by inhalation (See § 171.8 of this subchapter), a label conforming to specifications in the UN Recommendations may be used in place of a corresponding label that conforms to the requirements of this subpart.

(g) *Trefoil symbol.* The trefoil symbol on the RADIOACTIVE WHITE-I, RADIOACTIVE YELLOW-II, and RADIOACTIVE YELLOW-III labels must meet

§ 172.411

the appropriate specifications in appendix B of this part.

[Amdt. 172-123, 55 FR 52595, Dec. 21, 1990, as amended at 56 FR 66256, Dec. 20, 1991; Amdt. 172-143, 60 FR 50305, Sept. 28, 1995; 64 FR 10776, Mar. 5, 1999; 66 FR 8647, Feb. 1, 2001; 66 FR 44255, Aug. 22, 2001; 67 FR 61013, Sept. 27, 2002; 69 FR 64472, Nov. 4, 2004; 71 FR 78627, Dec. 29, 2006; 75 FR 72, Jan. 4, 2010]

§ 172.411 **EXPLOSIVE 1.1, 1.2, 1.3, 1.4, 1.5 and 1.6 labels, and EXPLOSIVE Subsidiary label.**

(a) Except for size and color, the EXPLOSIVE 1.1, EXPLOSIVE 1.2 and EXPLOSIVE 1.3 labels must be as follows:



(b) In addition to complying with § 172.407, the background color on the EXPLOSIVE 1.1, EXPLOSIVE 1.2 and EXPLOSIVE 1.3 labels must be orange. The “***” must be replaced with the appropriate division number and compatibility group letter. The compatibility group letter must be the same size as the division number and must be shown as a capitalized Roman letter.

(c) Except for size and color, the EXPLOSIVE 1.4, EXPLOSIVE 1.5 and EXPLOSIVE 1.6 labels must be as follows:

49 CFR Ch. I (10-1-10 Edition)

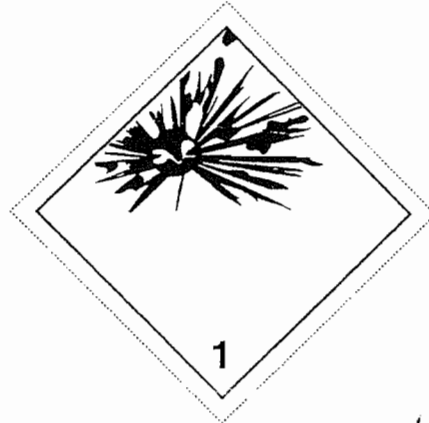
EXPLOSIVE 1.4:



EXPLOSIVE 1.5:



EXPLOSIVE 1.6:



(d) In addition to complying with §172.407, the background color on the EXPLOSIVE 1.4, EXPLOSIVE 1.5 and EXPLOSIVE 1.6 label must be orange. The "*" must be replaced with the appropriate compatibility group. The compatibility group letter must be shown as a capitalized Roman letter. Division numbers must measure at least 30 mm (1.2 inches) in height and at least 5 mm (0.2 inches) in width.

(e) An EXPLOSIVE subsidiary label is required for materials identified in Column (6) of the HMT as having an explosive subsidiary hazard. The division number or compability group letter may be displayed on the subsidiary hazard label. Except for size and color, the EXPLOSIVE subsidiary label must be as follows:

(f) The EXPLOSIVE subsidiary label must comply with § 172.407.

[Amdt. 172-123, 56 FR 66256, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994; 66 FR 33425, June 21, 2001; 68 FR 45031, July 31, 2003]

§ 172.415 NON-FLAMMABLE GAS label.

(a) Except for size and color, the NON-FLAMMABLE GAS label must be as follows:



(b) In addition to complying with §172.407, the background color on the NON-FLAMMABLE GAS label must be green.

[Amdt. 172-123, 56 66256, Dec. 20, 1991]

§ 172.416

§ 172.416 POISON GAS label.

(a) Except for size and color, the POISON GAS label must be as follows:

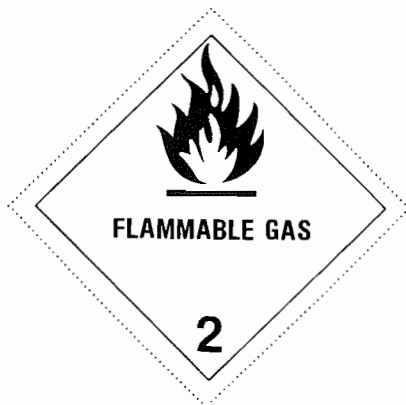


(b) In addition to complying with §172.407, the background on the POISON GAS label and the symbol must be white. The background of the upper diamond must be black and the lower point of the upper diamond must be 14 mm (0.54 inches) above the horizontal center line.

[62 FR 39405, July 22, 1997]

§ 172.417 FLAMMABLE GAS label.

(a) Except for size and color, the FLAMMABLE GAS label must be as follows:



49 CFR Ch. I (10-1-10 Edition)

(b) In addition to complying with §172.407, the background color on the FLAMMABLE GAS label must be red.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§ 172.419 FLAMMABLE LIQUID label.

(a) Except for size and color the FLAMMABLE LIQUID label must be as follows:



(b) In addition to complying with §172.407, the background color on the FLAMMABLE LIQUID label must be red.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§ 172.420 FLAMMABLE SOLID label.

(a) Except for size and color, the FLAMMABLE SOLID label must be as follows:

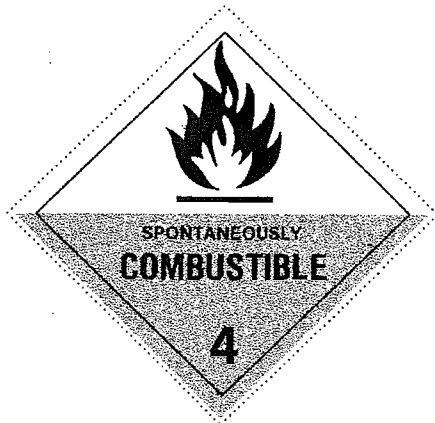


(b) In addition to complying with §172.407, the background on the FLAMMABLE SOLID label must be white with vertical red stripes equally spaced on each side of a red stripe placed in the center of the label. The red vertical stripes must be spaced so that, visually, they appear equal in width to the white spaces between them. The symbol (flame) and text (when used) must be overprinted. The text "FLAMMABLE SOLID" may be placed in a white rectangle.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§ 172.422 SPONTANEOUSLY COMBUSTIBLE label.

(a) Except for size and color, the SPONTANEOUSLY COMBUSTIBLE label must be as follows:



(b) In addition to complying with §172.407, the background color on the lower half of the SPONTANEOUSLY COMBUSTIBLE label must be red and the upper half must be white.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991, as amended at 57 FR 45458, Oct. 1, 1992]

§ 172.423 DANGEROUS WHEN WET label.

(a) Except for size and color, the DANGEROUS WHEN WET label must be as follows:



(b) In addition to complying with §172.407, the background color on the DANGEROUS WHEN WET label must be blue.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§ 172.426 OXIDIZER label.

(a) Except for size and color, the OXIDIZER label must be as follows:

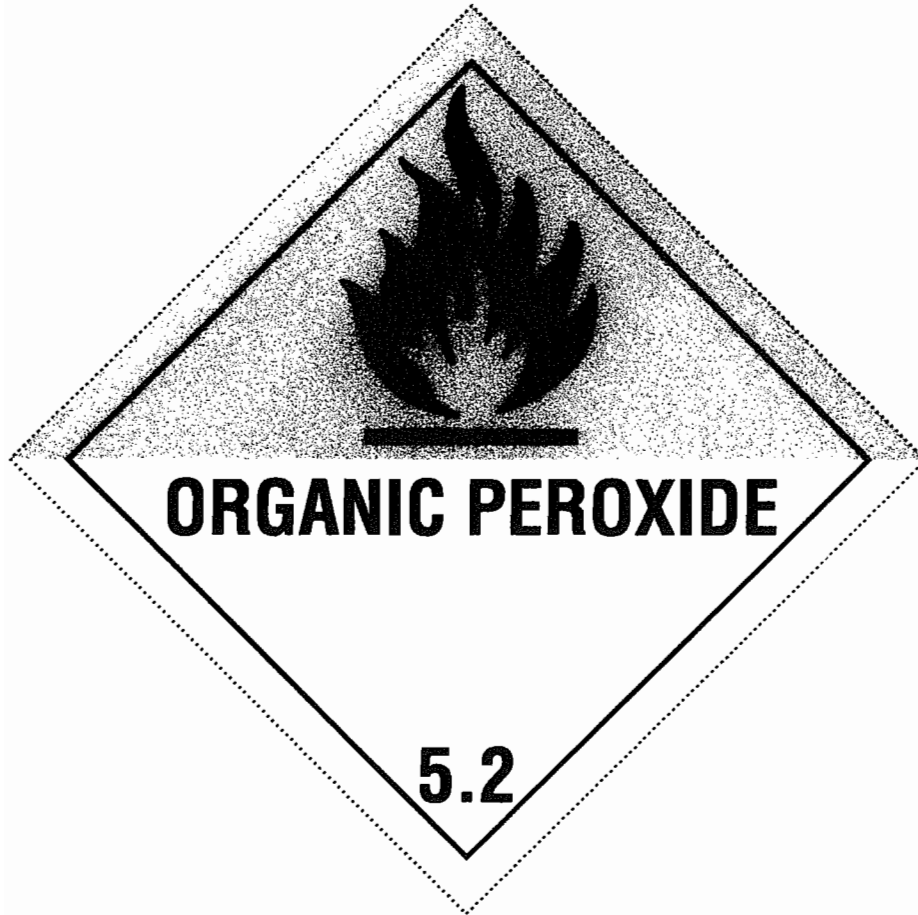


(b) In addition to complying with §172.407, the background color on the OXIDIZER label must be yellow.

[Amdt. 172-123, 56 FR 66257, Dec. 20, 1991]

§ 172.427 ORGANIC PEROXIDE label.

(a) Except for size and color, the ORGANIC PEROXIDE label must be as follows:



(b) In addition to complying with §172.407, the background on the ORGANIC PEROXIDE label must be red in the top half and yellow in the lower half.

[71 FR 78627, Dec. 29, 2006]

§ 172.429 POISON INHALATION HAZARD label.

(a) Except for size and color, the POISON INHALATION HAZARD label must be as follows:



(b) In addition to complying with §172.407, the background on the POISON INHALATION HAZARD label and the symbol must be white. The background of the upper diamond must be black and the lower point of the upper diamond must be 14 mm (0.54 inches) above the horizontal center line.

[62 FR 39406, July 22, 1997]

§ 172.430 POISON label.

(a) Except for size and color, the POISON label must be as follows:



(b) In addition to complying with §172.407, the background on the POISON label must be white. The word "TOXIC" may be used in lieu of the word "POISON".

[Amdt. 172-123, 56 FR 66258, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994]

§ 172.431 [Reserved]

§ 172.432 INFECTIOUS SUBSTANCE label.

(a) Except for size and color, the INFECTIOUS SUBSTANCE label must be as follows:



(b) In addition to complying with §172.407, the background on the INFECTIOUS SUBSTANCE label must be white.

[Amdt. 172–123, 56 FR 66258, Dec. 20, 1991, as amended at 67 FR 53136, Aug. 14, 2002]

§ 172.436 RADIOACTIVE WHITE-I label.

(a) Except for size and color, the RADIOACTIVE WHITE-I label must be as follows:



(b) In addition to complying with §172.407, the background on the RADIOACTIVE WHITE-I label must be white. The printing and symbol must be black, except for the "I" which must be red.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

§ 172.438 RADIOACTIVE YELLOW-II label.

(a) Except for size and color, the RADIOACTIVE YELLOW-II must be as follows:



(b) In addition to complying with §172.407, the background color on the RADIOACTIVE YELLOW-II label must be yellow in the top half and white in the lower half. The printing and sym-

bol must be black, except for the "II" which must be red.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

§ 172.440 RADIOACTIVE YELLOW-III label.

(a) Except for size and color, the RADIOACTIVE YELLOW-III label must be as follows:

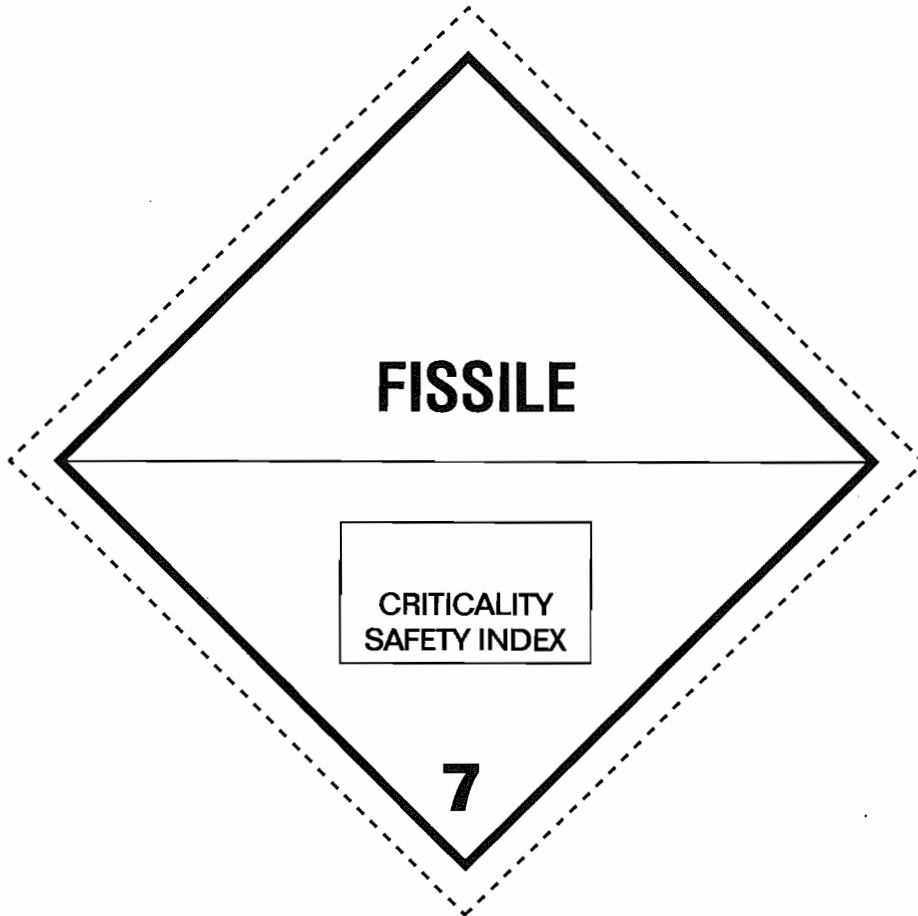


(b) In addition to complying with §172.407, the background color on the RADIOACTIVE YELLOW-III label must be yellow in the top half and white in the lower half. The printing and symbol must be black, except for the "III" which must be red.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

§ 172.441 FISSILE label.

(a) Except for size and color, the FISSILE label must be as follows:



(b) In addition to complying with § 172.407, the background color on the FISSILE label must be white.

[69 FR 3669, Jan. 26, 2004]

§ 172.442 CORROSIVE label.

(a) Except for size and color, the CORROSIVE label must be as follows:



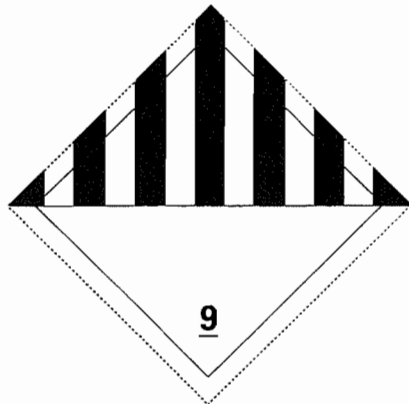
(b) In addition to complying with §172.407, the background on the CORROSIVE label must be white in the top half and black in the lower half.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991]

§ 172.444 [Reserved]

§ 172.446 CLASS 9 label.

(a) Except for size and color, the "CLASS 9" (miscellaneous hazardous materials) label must be as follows:



(b) In addition to complying with §172.407, the background on the CLASS 9 label must be white with seven black vertical stripes on the top half. The black vertical stripes must be spaced, so that, visually, they appear equal in width to the six white spaces between them. The lower half of the label must be white with the class number "9" underlined and centered at the bottom. The solid horizontal line dividing the lower and upper half of the label is optional.

[Amdt. 172-123, 56 FR 66259, Dec. 20, 1991, as amended at 74 FR 2252, Jan. 14, 2009]

§ 172.448 CARGO AIRCRAFT ONLY label.

(a) Except for size and color, the CARGO AIRCRAFT ONLY label must be as follows:



(b) The CARGO AIRCRAFT ONLY label must be black on an orange background.

(c) A CARGO AIRCRAFT ONLY label conforming to the specifications in this section and in §172.407(c)(2) in effect on

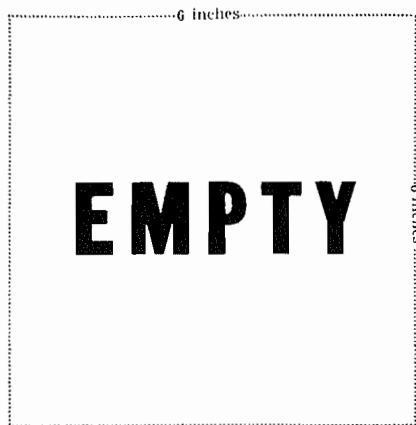
§ 172.450

October 1, 2008, may be used until January 1, 2013.

[74 FR 2252, Jan. 14, 2009, as amended at 75 FR 72, Jan. 4, 2010]

§ 172.450 EMPTY label.

(a) Each EMPTY label, except for size, must be as follows:



(1) Each side must be at least 6 inches (152 mm.) with each letter at least 1 inch (25.4 mm.) in height.

(2) The label must be white with black printing.

(b) [Reserved]

Subpart F—Placarding

§ 172.500 Applicability of placarding requirements.

(a) Each person who offers for transportation or transports any hazardous material subject to this subchapter shall comply with the applicable placarding requirements of this subpart.

(b) This subpart does not apply to—

(1) Infectious substances;

(2) Hazardous materials classed as ORM-D;

(3) Hazardous materials authorized by this subchapter to be offered for transportation as Limited Quantities when identified as such on shipping papers in accordance with §172.203(b);

(4) Hazardous materials prepared in accordance with §173.13 of this subchapter;

(5) Hazardous materials which are packaged as small quantities under the

49 CFR Ch. I (10–1–10 Edition)

provisions of §§173.4, 173.4a, 173.4b of this subchapter; and

(6) Combustible liquids in non-bulk packagings.

[Amdt. 172–123, 55 FR 52599, Dec. 21, 1990, as amended by Amdt. 172–149, 61 FR 27173, May 30, 1996; 74 FR 2253, Jan. 14, 2009]

§ 172.502 Prohibited and permissive placarding.

(a) *Prohibited placarding.* Except as provided in paragraph (b) of this section, no person may affix or display on a packaging, freight container, unit load device, motor vehicle or rail car—

(1) Any placard described in this subpart unless—

(i) The material being offered or transported is a hazardous material;

(ii) The placard represents a hazard of the hazardous material being offered or transported; and

(iii) Any placarding conforms to the requirements of this subpart.

(2) Any sign, advertisement, slogan (such as “Drive Safely”), or device that, by its color, design, shape or content, could be confused with any placard prescribed in this subpart.

(b) *Exceptions.* (1) The restrictions in paragraph (a) of this section do not apply to a bulk packaging, freight container, unit load device, transport vehicle or rail car which is placarded in conformance with TDG Regulations, the IMDG Code or the UN Recommendations (IBR, see §171.7 of this subchapter).

(2) The restrictions of paragraph (a) of this section do not apply to the display of a BIOHAZARD marking, a “HOT” marking, or an identification number on a white square-on-point configuration in accordance with §§172.323(c), 172.325(c), or 172.336(b) of this part, respectively.

(3) The restrictions in paragraph (a)(2) of this section do not apply until October 1, 2001 to a safety sign or safety slogan (e.g., “Drive Safely” or “Drive Carefully”), which was permanently marked on a transport vehicle, bulk packaging, or freight container on or before August 21, 1997.

(c) *Permissive placarding.* Placards may be displayed for a hazardous material, even when not required, if the

placarding otherwise conforms to the requirements of this subpart.

[Amdt. 172-123, 55 FR 52599, Dec. 21, 1990, as amended at 56 FR 66259, Dec. 20, 1991; Amdt. 172-151, 62 FR 1230, Jan. 8, 1997; 62 FR 39389 and 39407, July 22, 1997; 66 FR 8647, Feb. 1, 2001; 66 FR 33426, June 21, 2001; 67 FR 53137, Aug. 14, 2002; 68 FR 75741, Dec. 31, 2003]

§ 172.503 Identification number display on placards.

For procedures and limitations pertaining to the display of identification numbers on placards, see § 172.334.

[Amdt. 172-58, 45 FR 34701, May 22, 1980]

§ 172.504 General placarding requirements.

(a) *General.* Except as otherwise provided in this subchapter, each bulk packaging, freight container, unit load device, transport vehicle or rail car containing any quantity of a hazardous material must be placarded on each side and each end with the type of placards specified in tables 1 and 2 of this section and in accordance with other placarding requirements of this subpart, including the specifications for the placards named in the tables and described in detail in §§ 172.519 through 172.560.

(b) *DANGEROUS placard.* A freight container, unit load device, transport vehicle, or rail car which contains non-bulk packages with two or more categories of hazardous materials that require different placards specified in table 2 of paragraph (e) of this section may be placarded with a DANGEROUS placard instead of the separate placarding specified for each of the materials in table 2 of paragraph (e) of

this section. However, when 1,000 kg (2,205 pounds) aggregate gross weight or more of one category of material is loaded therein at one loading facility on a freight container, unit load device, transport vehicle, or rail car, the placard specified in table 2 of paragraph (e) of this section for that category must be applied.

(c) *Exception for less than 454 kg (1,001 pounds).* Except for bulk packagings and hazardous materials subject to § 172.505, when hazardous materials covered by table 2 of this section are transported by highway or rail, placards are not required on—

(1) A transport vehicle or freight container which contains less than 454 kg (1001 pounds) aggregate gross weight of hazardous materials covered by table 2 of paragraph (e) of this section; or

(2) A rail car loaded with transport vehicles or freight containers, none of which is required to be placarded.

The exceptions provided in paragraph (c) of this section do not prohibit the display of placards in the manner prescribed in this subpart, if not otherwise prohibited (see § 172.502), on transport vehicles or freight containers which are not required to be placarded.

(d) *Exception for empty non-bulk packages.* Except for hazardous materials subject to § 172.505, a non-bulk packaging that contains only the residue of a hazardous material covered by Table 2 of paragraph (e) of this section need not be included in determining placarding requirements.

(e) *Placarding tables.* Placards are specified for hazardous materials in accordance with the following tables:

TABLE 1

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.1	EXPLOSIVES 1.1	172.522
1.2	EXPLOSIVES 1.2	172.522
1.3	EXPLOSIVES 1.3	172.522
2.3	POISON GAS	172.540
4.3	DANGEROUS WHEN WET	172.548
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE	172.552
6.1 (material poisonous by inhalation (see § 171.8 of this subchapter)).	POISON INHALATION HAZARD	172.555
7 (Radioactive Yellow III label only)	RADIOACTIVE ¹	172.556

¹ RADIOACTIVE placard also required for exclusive use shipments of low specific activity material and surface contaminated objects transported in accordance with § 173.427(b)(4) and (5) or (c) of this subchapter.

TABLE 2

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.4	EXPLOSIVES 1.4	172.523
1.5	EXPLOSIVES 1.5	172.524
1.6	EXPLOSIVES 1.6	172.525
2.1	FLAMMABLE GAS	172.532
2.2	NON-FLAMMABLE GAS	172.528
3	FLAMMABLE	172.542
Combustible liquid	COMBUSTIBLE	172.544
4.1	FLAMMABLE SOLID	172.546
4.2	SPONTANEOUSLY COMBUSTIBLE	172.547
5.1	OXIDIZER	172.550
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE	172.552
6.1 (other than material poisonous by inhalation)	POISON	172.554
6.2	(None)	
8	CORROSIVE	172.558
9	Class 9 (see § 172.504(f)(9))	172.560
ORM-D	(None)	

(f) *Additional placarding exceptions.* (1) When more than one division placard is required for Class 1 materials on a transport vehicle, rail car, freight container or unit load device, only the placard representing the lowest division number must be displayed.

(2) A FLAMMABLE placard may be used in place of a COMBUSTIBLE placard on—

(i) A cargo tank or portable tank.

(ii) A compartmented tank car which contains both flammable and combustible liquids.

(3) A NON-FLAMMABLE GAS placard is not required on a transport vehicle which contains non-flammable gas if the transport vehicle also contains flammable gas or oxygen and it is placarded with FLAMMABLE GAS or OXYGEN placards, as required.

(4) OXIDIZER placards are not required for Division 5.1 materials on freight containers, unit load devices, transport vehicles or rail cars which also contain Division 1.1 or 1.2 materials and which are placarded with EXPLOSIVES 1.1 or 1.2 placards, as required.

(5) For transportation by transport vehicle or rail car only, an OXIDIZER placard is not required for Division 5.1 materials on a transport vehicle, rail car or freight container which also contains Division 1.5 explosives and is placarded with EXPLOSIVES 1.5 placards, as required.

(6) The EXPLOSIVE 1.4 placard is not required for those Division 1.4 Compatibility Group S (1.4S) materials that are not required to be labeled 1.4S.

(7) For domestic transportation of oxygen, compressed or oxygen, refrigerated liquid, the OXYGEN placard in §172.530 of this subpart may be used in place of a NON-FLAMMABLE GAS placard.

(8) For domestic transportation, a POISON INHALATION HAZARD placard is not required on a transport vehicle or freight container that is already placarded with the POISON GAS placard.

(9) For Class 9, a CLASS 9 placard is not required for domestic transportation, including that portion of international transportation, defined in §171.8 of this subchapter, which occurs within the United States. However, a bulk packaging must be marked with the appropriate identification number on a CLASS 9 placard, an orange panel, or a white square-on-point display configuration as required by subpart D of this part.

(10) For Division 6.1, PG III materials, a POISON placard may be modified to display the text "PG III" below the mid line of the placard.

(11) For domestic transportation, a POISON placard is not required on a transport vehicle or freight container required to display a POISON INHALATION HAZARD or POISON GAS placard.

(g) For shipments of Class 1 (explosive materials) by aircraft or vessel, the applicable compatibility group letter must be displayed on the placards, or labels when applicable, required by this section. When more than one compatibility group placard is required for Class 1 materials, only one placard is required to be displayed, as provided in paragraphs (g)(1) through (g)(4) of this section. For the purposes of paragraphs (g)(1) through (g)(4), there is a distinction between the phrases *explosive articles* and *explosive substances*. *Explosive article* means an article containing an explosive substance; examples include a detonator, flare, primer or fuse. *Explosive substance* means a substance contained in a packaging that is not contained in an article; examples include black powder and smokeless powder.

(1) Explosive articles of compatibility groups C, D or E may be placarded displaying compatibility group E.

(2) Explosive articles of compatibility groups C, D, or E, when transported with those in compatibility group N, may be placarded displaying compatibility group D.

(3) Explosive substances of compatibility groups C and D may be placarded displaying compatibility group D.

(4) Explosive articles of compatibility groups C, D, E or G, except for fireworks, may be placarded displaying compatibility group E.

[Amdt. 172-123, 55 FR 52600, Dec. 21, 1990]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 172.504, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 172.505 Placarding for subsidiary hazards.

(a) Each transport vehicle, freight container, portable tank, unit load device, or rail car that contains a poisonous material subject to the "Poison Inhalation Hazard" shipping description of § 172.203(m) must be placarded with a POISON INHALATION HAZARD or POISON GAS placard, as appropriate, on each side and each end, in addition to any other placard required for that material in § 172.504. Duplication

of the POISON INHALATION HAZARD or POISON GAS placard is not required.

(b) In addition to the RADIOACTIVE placard which may be required by § 172.504(e) of this subpart, each transport vehicle, portable tank or freight container that contains 454 kg (1001 pounds) or more gross weight of fissile or low specific activity uranium hexafluoride shall be placarded with a CORROSIVE placard on each side and each end.

(c) Each transport vehicle, portable tank, freight container or unit load device that contains a material which has a subsidiary hazard of being dangerous when wet, as defined in § 173.124 of this subchapter, shall be placarded with DANGEROUS WHEN WET placards, on each side and each end, in addition to the placards required by § 172.504.

(d) Hazardous materials that possess secondary hazards may exhibit subsidiary placards that correspond to the placards described in this part, even when not required by this part (see also § 172.519(b) (4) of this subpart).

[Amdt. 172-123, 55 FR 52601, Dec. 21, 1990, as amended at 56 FR 66260, Dec. 20, 1991; 57 FR 45460, Oct. 1, 1992; Amdt. 172-127, 59 FR 49133, Sept. 26, 1994; Amdt. 172-151, 62 FR 1231, Jan. 8, 1997; 62 FR 39398, July 22, 1997; 65 FR 58626, Sept. 29, 2000; 72 FR 55692, Oct. 1, 2007]

§ 172.506 Providing and affixing placards: Highway.

(a) Each person offering a motor carrier a hazardous material for transportation by highway shall provide to the motor carrier the required placards for the material being offered prior to or at the same time the material is offered for transportation, unless the carrier's motor vehicle is already placarded for the material as required by this subpart.

(1) No motor carrier may transport a hazardous material in a motor vehicle, unless the placards required for the hazardous material are affixed thereto as required by this subpart.

(2) [Reserved]

(b) [Reserved]

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-29A, 41 FR 40679, Sept. 20, 1976]

§ 172.507

49 CFR Ch. I (10–1–10 Edition)

§ 172.507 **Special placarding provisions: Highway.**

(a) Each motor vehicle used to transport a package of highway route controlled quantity Class 7 (radioactive) materials (see § 173.403 of this subchapter) must have the required RADIOACTIVE warning placard placed on a square background as described in § 172.527.

(b) A nurse tank, meeting the provisions of § 173.315(m) of this subchapter, is not required to be placarded on an end containing valves, fittings, regulators or gauges when those appurtenances prevent the markings and placard from being properly placed and visible.

[Amdt. 172-103, 51 FR 5971, Feb. 18, 1986, as amended by Amdt. 172-143, 60 FR 50305, Sept. 28, 1995]

§ 172.508 **Placarding and affixing placards: Rail.**

(a) Each person offering a hazardous material for transportation by rail shall affix to the rail car containing the material, the placards specified by this subpart. Placards displayed on motor vehicles, transport containers, or portable tanks may be used to satisfy this requirement, if the placards otherwise conform to the provisions of this subpart.

(b) No rail carrier may accept a rail car containing a hazardous material for transportation unless the placards for the hazardous material are affixed thereto as required by this subpart.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-123, 55 FR 52601, Dec. 21, 1990]

§ 172.510 **Special placarding provisions: Rail.**

(a) *White square background.* The following must have the specified placards placed on a white square background, as described in § 172.527:

(1) Division 1.1 and 1.2 (explosive) materials which require EXPLOSIVES 1.1 or EXPLOSIVES 1.2 placards affixed to the rail car;

(2) Materials classed in Division 2.3 Hazard Zone A or 6.1 Packing Group I Hazard Zone A which require POISON GAS or POISON placards affixed to the

rail car, including tank cars containing only a residue of the material; and

(3) Class DOT 113 tank cars used to transport a Division 2.1 (flammable gas) material, including tank cars containing only a residue of the material.

(b) *Chemical ammunition.* Each rail car containing Division 1.1 or 1.2 (explosive) ammunition which also meets the definition of a material poisonous by inhalation (see § 171.8 of this subchapter) must be placarded EXPLOSIVES 1.1 or EXPLOSIVES 1.2 and POISON GAS or POISON INHALATION HAZARD.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-103, 51 FR 5971, Feb. 18, 1986; Amdt. 172-110, 52 FR 29528, Aug. 10, 1987; Amdt. 172-111, 52 FR 36671, Sept. 30, 1987; Amdt. 172-123, 55 FR 52601, Dec. 21, 1990; 56 FR 66260, Dec. 20, 1991; 57 FR 45460, Oct. 1, 1992; Amdt. 172-248, 61 FR 28676, June 5, 1996; Amdt. 172-151, 62 FR 1231, Jan. 8, 1997; 62 FR 39398, July 22, 1997]

§ 172.512 **Freight containers and aircraft unit load devices.**

(a) *Capacity of 640 cubic feet or more.* Each person who offers for transportation, and each person who loads and transports, a hazardous material in a freight container or aircraft unit load device having a capacity of 640 cubic feet or more shall affix to the freight container or aircraft unit load device the placards specified for the material in accordance with § 172.504. However:

(1) The placarding exception provided in § 172.504(c) applies to motor vehicles transporting freight containers and aircraft unit load devices,

(2) The placarding exception provided in § 172.504(c) applies to each freight container and aircraft unit load device being transported for delivery to a consignee immediately following an air or water shipment, and,

(3) Placarding is not required on a freight container or aircraft unit load device if it is only transported by air and is identified as containing a hazardous material in the manner provided in part 7, chapter 2, section 2.7, of the ICAO Technical Instructions (IBR, see § 171.7 of this subchapter).

(b) *Capacity less than 18 m³ (640 cubic feet).* Each person who offers for transportation by air, and each person who loads and transports by air, a hazardous material in a freight container

or aircraft unit load device having a capacity of less than 18 m³ (640 cubic feet) shall affix one placard of the type specified by paragraph (a) of this section unless the freight container or aircraft unit load device:

(1) Is labeled in accordance with subpart E of this part, including § 172.406(e);

(2) Contains radioactive materials requiring the Radioactive Yellow III label and is placarded with one Radioactive placard and is labeled in accordance with subpart E of this part, including § 172.406(e); or,

(3) Is identified as containing a hazardous material in the manner provided in part 7, chapter 2, section 2.7, of the ICAO Technical Instructions. When hazardous materials are offered for transportation, not involving air transportation, in a freight container having a capacity of less than 640 cubic feet the freight container need not be placarded. However, if not placarded, it must be labeled in accordance with subpart E of this part.

(c) Notwithstanding paragraphs (a) and (b) of this section, packages containing hazardous materials, other than ORM-D, offered for transportation by air in freight containers are subject to the inspection requirements of § 175.30 of this chapter.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-29A, 41 FR 40680, Sept. 20, 1976; Amdt. 172-87, 48 FR 53712, Nov. 29, 1983; 48 FR 55469, Dec. 13, 1983; Amdt. 172-103, 51 FR 5971, Feb. 18, 1986; Amdt. 172-111, 52 FR 36671, Sept. 30, 1987; Amdt. 172-123, 55 FR 52601, Dec. 21, 1990; 66 FR 33426, June 21, 2001; 66 FR 45182, Aug. 28, 2001; 68 FR 75741, Dec. 31, 2003; 69 FR 54046, Sept. 7, 2004]

§ 172.514 Bulk packagings.

(a) Except as provided in paragraph (c) of this section, each person who offers for transportation a bulk packaging which contains a hazardous material, shall affix the placards specified for the material in §§ 172.504 and 172.505.

(b) Each bulk packaging that is required to be placarded when it contains a hazardous material, must remain placarded when it is emptied, unless it—

(1) Is sufficiently cleaned of residue and purged of vapors to remove any potential hazard;

(2) Is refilled, with a material requiring different placards or no placards, to such an extent that any residue remaining in the packaging is no longer hazardous; or

(3) Contains the residue of a hazardous substance in Class 9 in a quantity less than the reportable quantity, and conforms to § 173.29(b)(1) of this subchapter.

(c) Exceptions. The following packagings may be placarded on only two opposite sides or, alternatively, may be labeled instead of placarded in accordance with subpart E of this part:

(1) A portable tank having a capacity of less than 3,785 L (1000 gallons);

(2) A DOT 106 or 110 multi-unit tank car tank;

(3) A bulk packaging other than a portable tank, cargo tank, or tank car (e.g., a bulk bag or box) with a volumetric capacity of less than 18 cubic meters (640 cubic feet);

(4) An IBC; and

(5) A Large Packaging as defined in § 171.8 of this subchapter.

[Amdt. 172-136, 59 FR 38064, July 26, 1994; Amdt. 172-148, 61 FR 50255, Sept. 25, 1996, as amended by 66 FR 45379, Aug. 28, 2001; 69 FR 64473, Nov. 4, 2004; 75 FR 5392, Feb. 2, 2010]

§ 172.516 Visibility and display of placards.

(a) Each placard on a motor vehicle and each placard on a rail car must be clearly visible from the direction it faces, except from the direction of another transport vehicle or rail car to which the motor vehicle or rail car is coupled. This requirement may be met by the placards displayed on the freight containers or portable tanks loaded on a motor vehicle or rail car.

(b) The required placarding of the front of a motor vehicle may be on the front of a truck-tractor instead of or in addition to the placarding on the front of the cargo body to which a truck-tractor is attached.

(c) Each placard on a transport vehicle, bulk packaging, freight container or aircraft unit load device must—

(1) Be securely attached or affixed thereto or placed in a holder thereon. (See appendix C to this part.);

(2) Be located clear of appurtenances and devices such as ladders, pipes, doors, and tarpaulins;

§ 172.519

49 CFR Ch. I (10–1–10 Edition)

(3) So far as practicable, be located so that dirt or water is not directed to it from the wheels of the transport vehicle;

(4) Be located away from any marking (such as advertising) that could substantially reduce its effectiveness, and in any case at least 3 inches (76.0 mm.) away from such marking;

(5) Have the words or identification number (when authorized) printed on it displayed horizontally, reading from left to right;

(6) Be maintained by the carrier in a condition so that the format, legibility, color, and visibility of the placard will not be substantially reduced due to damage, deterioration, or obscurement by dirt or other matter;

(7) Be affixed to a background of contrasting color, or must have a dotted or solid line outer border which contrasts with the background color.

(d) Recommended specifications for a placard holder are set forth in appendix C of this part. Except for a placard holder similar to that contained in appendix C to this part, the means used to attach a placard may not obscure any part of its surface other than the borders.

(e) A placard or placard holder may be hinged provided the required format, color, and legibility of the placard are maintained.

[Amdt. 172–29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172–101, 45 FR 74668, Nov. 10, 1980; Amdt. 172–123, 55 FR 52601, Dec. 21, 1990; 65 FR 50460, Aug. 18, 2000]

§ 172.519 General specifications for placards.

(a) *Strength and durability.* Placards must conform to the following:

(1) A placard may be made of any plastic, metal or other material capable of withstanding, without deterioration or a substantial reduction in effectiveness, a 30-day exposure to open weather conditions.

(2) A placard made of tagboard must be at least equal to that designated commercially as white tagboard. Tagboard must have a weight of at least 80 kg (176 pounds) per ream of 610 by 910 mm (24 by 36-inch) sheets, waterproofing materials included. In addition, each placard made of tagboard

must be able to pass a 414 kPa (60 p.s.i.) Mullen test.

(3) Reflective or retroreflective materials may be used on a placard if the prescribed colors, strength and durability are maintained.

(b) *Design.* (1) Except as provided in § 172.332 of this part, each placard must be as described in this subpart, and except for size and color, the printing, inner border and symbol must be as shown in §§ 172.521 through 172.560 of this subpart, as appropriate.

(2) The dotted line border shown on each placard is not part of the placard specification. However, a dotted or solid line outer border may be used when needed to indicate the full size of a placard that is part of a larger format or is on a background of a non-contrasting color.

(3) For other than Class 7 or the DANGEROUS placard, text indicating a hazard (for example, “FLAMMABLE”) is not required. Text may be omitted from the OXYGEN placard only if the specific identification number is displayed on the placard.

(4) For a placard corresponding to the primary or subsidiary hazard class of a material, the hazard class or division number must be displayed in the lower corner of the placard. However, a permanently affixed subsidiary placard meeting the specifications of this section which were in effect on October 1, 2001, (such as, a placard without the hazard class or division number displayed in the lower corner of the placard) and which was installed prior to September 30, 2001, may continue to be used as a subsidiary placard in domestic transportation by rail or highway, provided the color tolerances are maintained and are in accordance with the display requirements in this subchapter. Stocks of non-permanently affixed subsidiary placards in compliance with the requirements in effect on September 30, 2001, may continue to be used in domestic transportation by rail or highway until October 1, 2005, or until current stocks are depleted, whichever occurs first.

(c) *Size.* (1) Each placard prescribed in this subpart must measure at least 273 mm (10.8 inches) on each side and must

have a solid line inner border approximately 12.7 mm (0.5 inches) from each edge.

(2) Except as otherwise provided in this subpart, the hazard class or division number, as appropriate, must be shown in numerals measuring at least 41 mm (1.6 inches) in height.

(3) Except as otherwise provided in this subpart, when text indicating a hazard is displayed on a placard, the printing must be in letters measuring at least 41 mm (1.6 inches) in height.

(d) *Color.* (1) The background color, symbol, text, numerals and inner border on a placard must be as specified in §§ 172.521 through 172.560 of this subpart, as appropriate.

(2) Black and any color on a placard must be able to withstand, without substantial change—

(i) A 72-hour fadeometer test (for a description of equipment designed for this purpose, see ASTM G 23-69 or ASTM G 26-70); and

(ii) A 30-day exposure to open weather.

(3) Upon visual examination, a color on a placard must fall within the color tolerances displayed on the appropriate Hazardous Materials Label and Placard Color Tolerance Chart (see § 172.407(d)(4)). As an alternative, the PANTONE® formula guide coated/uncoated as specified for colors in § 172.407(d)(5) may be used.

(4) The placard color must extend to the inner border and may extend to the edge of the placard in the area designated on each placard except the color on the CORROSIVE and RADIOACTIVE placards (black and yellow, respectively) must extend only to the inner border.

(e) *Form identification.* A placard may contain form identification information, including the name of its maker, provided that information is printed outside of the solid line inner border in no larger than 10-point type.

(f) *Exceptions.* When hazardous materials are offered for transportation or transported under the provisions of subpart C of part 171 of this subchapter, a placard conforming to the specifications in the ICAO Technical Instructions, the IMDG Code, or the Transport Canada TDG Regulations (IBR, see § 171.7 of this subchapter) may be used

in place of a corresponding placard conforming to the requirements of this subpart. However, a bulk packaging, transport vehicle, or freight container containing a material poisonous by inhalation (see § 171.8 of this subchapter) must be placarded in accordance with this subpart (see § 171.23(b)(11) of this subchapter).

(g) *Trefoil symbol.* The trefoil symbol on the RADIOACTIVE placard must meet the appropriate specification in appendix B of this part.

[Amdt. 172-123, 55 FR 52601, Dec. 21, 1990, as amended at 56 FR 66260, Dec. 20, 1991; 57 FR 45460, Oct. 1, 1992; Amdt. 172-143, 60 FR 50305, Sept. 28, 1995; 65 FR 50460, Aug. 18, 2000; 66 FR 33426, June 21, 2001; 66 FR 44255, Aug. 22, 2001; 67 FR 15743, Apr. 3, 2002; 70 FR 34075, June 13, 2005; 69 FR 64473, Nov. 4, 2004; 72 FR 25176, May 3, 2007]

§ 172.521 DANGEROUS placard.

(a) Except for size and color, the DANGEROUS placard must be as follows:



(b) In addition to meeting the requirements of § 172.519, and appendix B to this part, the DANGEROUS placard must have a red upper and lower triangle. The placard center area and 1/2-inch (12.7 mm.) border must be white. The inscription must be black with the 1/8-inch (3.2 mm.) border marker in the white area at each end of the inscription red.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-29A, 41 FR 40680, Sept. 20, 1976]

§ 172.522

§ 172.522 EXPLOSIVES 1.1, EXPLOSIVES 1.2 and EXPLOSIVES 1.3 placards.

(a) Except for size and color, the EXPLOSIVES 1.1, EXPLOSIVES 1.2 and EXPLOSIVES 1.3 placards must be as follows:



(b) In addition to complying with § 172.519 of this subpart, the background color on the EXPLOSIVES 1.1, EXPLOSIVES 1.2, and EXPLOSIVES 1.3 placards must be orange. The "*" shall be replaced with the appropriate division number and, when required, appropriate compatibility group letter. The symbol, text, numerals and inner border must be black.

[Amdt. 172-123, 55 FR 52602, Dec. 21, 1990, as amended at 56 FR 66260, Dec. 20, 1991]

§ 172.523 EXPLOSIVES 1.4 placard.

(a) Except for size and color, the EXPLOSIVES 1.4 placard must be as follows:



(b) In addition to complying with § 172.519 of this subpart, the background color on the EXPLOSIVES 1.4 placard must be orange. The "*" shall be replaced, when required, with the appropriate compatibility group letter. The division numeral, 1.4, must measure at least 64 mm (2.5 inches) in height. The text, numerals and inner border must be black.

[Amdt. 172-123, 55 FR 52602, Dec. 21, 1990, as amended at 56 FR 66261, Dec. 20, 1991]

§ 172.524 EXPLOSIVES 1.5 placard.

(a) Except for size and color, the EXPLOSIVES 1.5 placard must be as follows:



(b) In addition to complying with the § 172.519 of this subpart, the background color on EXPLOSIVES 1.5 placard

must be orange. The "*" shall be replaced, when required, with the appropriate compatibility group letter. The division numeral, 1.5, must measure at least 64 mm (2.5 inches) in height. The text, numerals and inner border must be black.

[Amdt. 172-123, 55 FR 52602, Dec. 21, 1990, as amended at 56 FR 66261, Dec. 20, 1991]

§ 172.525 EXPLOSIVES 1.6 placard.

(a) Except for size and color the EXPLOSIVES 1.6 placard must be as follows:



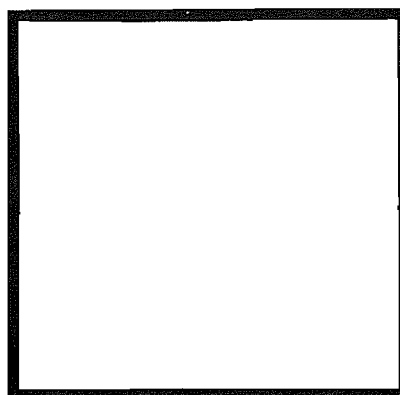
(b) In addition to complying with §172.519 of this subpart, the background color on the EXPLOSIVES 1.6 placard must be orange. The "*" shall be replaced, when required, with the appropriate compatibility group letter. The division numeral, 1.6, must measure at least 64 mm (2.5 inches) in height. The text, numerals and inner border must be black.

[Amdt. 172-123, 55 FR 52603, Dec. 21, 1990, as amended at 56 FR 66261, Dec. 20, 1991; Amdt. 172-130, 58 FR 51531, Oct. 1, 1993]

§ 172.526 [Reserved]

§ 172.527 Background requirements for certain placards.

(a) Except for size and color, the square background required by §172.510(a) for certain placards on rail cars, and §172.507 for placards on motor vehicles containing a package of highway route controlled quantity radioactive materials, must be as follows:



(b) In addition to meeting the requirements of §172.519 for minimum durability and strength, the square background must consist of a white square measuring 14¼ inches (362.0 mm.) on each side surrounded by a black border extending to 15¼ inches (387.0 mm.) on each side.

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-64, 46 FR 5316, Jan. 19, 1981; Amdt. 172-78, 48 FR 10226, Mar. 10, 1983]

§ 172.528 NON-FLAMMABLE GAS placard.

(a) Except for size and color, the NON-FLAMMABLE GAS placard must be as follows:



(b) In addition to complying with §172.519, the background color on the NON-FLAMMABLE GAS placard must be green. The letters in both words must be at least 38 mm (1.5 inches)

§ 172.530

high. The symbol, text, class number and inner border must be white.

[Amdt. 172-123, 56 FR 66261, Dec. 20, 1991]

§ 172.530 OXYGEN placard.

(a) Except for size and color, the OXYGEN placard must be as follows:



(b) In addition to complying with §172.519 of this subpart, the background color on the OXYGEN placard must be yellow. The symbol, text, class number and inner border must be black.

[Amdt. 172-123, 56 FR 66262, Dec. 20, 1991]

§ 172.532 FLAMMABLE GAS placard.

(a) Except for size and color, the FLAMMABLE GAS placard must be as follows:



(b) In addition to complying with §172.519, the background color on the

49 CFR Ch. I (10-1-10 Edition)

FLAMMABLE GAS placard must be red. The symbol, text, class number and inner border must be white.

[Amdt. 172-123, 56 FR 66262, Dec. 20, 1991]

§ 172.536 [Reserved]

§ 172.540 POISON GAS placard.

(a) Except for size and color, the POISON GAS placard must be as follows:



(b) In addition to complying with §172.519, the background on the POISON GAS placard and the symbol must be white. The background of the upper diamond must be black and the lower point of the upper diamond must be 65 mm (2 5/8 inches) above the horizontal center line. The text, class number, and inner border must be black.

[62 FR 39408, July 22, 1997]

§ 172.542 FLAMMABLE placard.

(a) Except for size and color, the FLAMMABLE placard must be as follows:



(b) In addition to complying with §172.519, the background color on the FLAMMABLE placard must be red. The symbol, text, class number and inner border must be white.

(c) The word "GASOLINE" may be used in place of the word "FLAMMABLE" on a placard that is displayed on a cargo tank or a portable tank being used to transport gasoline by highway. The word "GASOLINE" must be shown in white.

[Amdt. 172-123, 56 FR 66262, Dec. 20, 1991]

§ 172.544 COMBUSTIBLE placard.

(a) Except for size and color, the COMBUSTIBLE placard must be as follows:



(b) In addition to complying with §172.519, the background color on the COMBUSTIBLE placard must be red.

The symbol, text, class number and inner border must be white. On a COMBUSTIBLE placard with a white bottom as prescribed by §172.332(c)(4), the class number must be red or black.

(c) The words "FUEL OIL" may be used in place of the word "COMBUSTIBLE" on a placard that is displayed on a cargo tank or portable tank being used to transport by highway fuel oil that is not classed as a flammable liquid. The words "FUEL OIL" must be white.

[Amdt. 172-123, 56 FR 66262, Dec. 20, 1991]

§ 172.546 FLAMMABLE SOLID placard.

(a) Except for size and color, the FLAMMABLE SOLID placard must be as follows:



(b) In addition to complying with §172.519, the background on the FLAMMABLE SOLID placard must be white with seven vertical red stripes. The stripes must be equally spaced, with one red stripe placed in the center of the label. Each red stripe and each white space between two red stripes must be 25 mm (1.0 inches) wide. The letters in the word "SOLID" must be at least 38.1 mm (1.5 inches) high. The symbol, text, class number and inner border must be black.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991]

§ 172.547 SPONTANEOUSLY COMBUSTIBLE placard.

(a) Except for size and color, the SPONTANEOUSLY COMBUSTIBLE placard must be as follows:

§ 172.548



(b) In addition to complying with §172.519, the background color on the SPONTANEOUSLY COMBUSTIBLE placard must be red in the lower half and white in upper half. The letters in the word "SPONTANEOUSLY" must be at least 12 mm (0.5 inch) high. The symbol, text, class number and inner border must be black.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994]

§ 172.548 DANGEROUS WHEN WET placard.

(a) Except for size and color, the DANGEROUS WHEN WET placard must be as follows:



49 CFR Ch. I (10-1-10 Edition)

(b) In addition to complying with §172.519, the background color on the DANGEROUS WHEN WET placard must be blue. The letters in the words "WHEN WET" must be at least 25 mm (1.0 inches) high. The symbol, text, class number and inner border must be white.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991]

§ 172.550 OXIDIZER placard.

(a) Except for size and color, the OXIDIZER placard must be as follows:



(b) In addition to complying with §172.519, the background color on the OXIDIZER placard must be yellow. The symbol, text, division number and inner border must be black.

[Amdt. 172-123, 56 FR 66263, Dec. 20, 1991]

§ 172.552 ORGANIC PEROXIDE placard.

(a) Except for size and color, the ORGANIC PEROXIDE placard must be as follows:



(b) In addition to complying with §172.519, the background on the ORGANIC PEROXIDE placard must be red in the top half and yellow in the lower half. The text, division number and inner border must be black; the symbol may be either black or white.

[71 FR 78628, Dec. 29, 2006]

§ 172.553 [Reserved]

§ 172.554 **POISON placard.**

(a) Except for size and color, the POISON placard must be as follows:



§ 172.555

(b) In addition to complying with §172.519, the background on the POISON placard must be white. The symbol, text, class number and inner border must be black. The word "TOXIC" may be used in lieu of the word "POISON".

[Amdt. 172-123, 56 FR 66264, Dec. 20, 1991, as amended by Amdt. 172-139, 59 FR 67490, Dec. 29, 1994]

§ 172.555 POISON INHALATION HAZARD placard.

(a) Except for size and color, the POISON INHALATION HAZARD placard must be as follows:



49 CFR Ch. I (10-1-10 Edition)

(b) In addition to complying with §172.519, the background on the POISON INHALATION HAZARD placard and the symbol must be white. The background of the upper diamond must be black and the lower point of the upper diamond must be 65 mm (2⁵/₈ inches) above the horizontal center line. The text, class number, and inner border must be black.

[62 FR 39409, July 22, 1997]

§ 172.556 RADIOACTIVE placard.

(a) Except for size and color, the RADIOACTIVE placard must be as follows:



(b) In addition to complying with §172.519, the background color on the RADIOACTIVE placard must be white in the lower portion with a yellow triangle in the upper portion. The base of the yellow triangle must be 29 mm \pm 5 mm (1.1 inches \pm 0.2 inches) above the placard horizontal center line. The

symbol, text, class number and inner border must be black.

[Amdt. 172-123, 56 FR 66264, Dec. 20, 1991; Amdt. 172-130, 58 FR 51531, Oct. 1, 1993; 65 FR 58627, Sept. 29, 2000]

§ 172.558 CORROSIVE placard.

(a) Except for size and color, the CORROSIVE placard must be as follows:

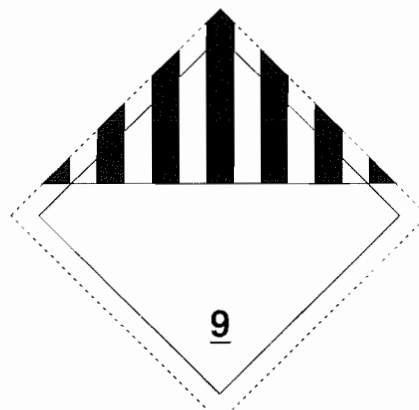


(b) In addition to complying with §172.519, the background color on the CORROSIVE placard must be black in the lower portion with a white triangle in the upper portion. The base of the white triangle must be 38 mm ±5 mm (1.5 inches ±0.2 inches) above the placard horizontal center line. The text and class number must be white. The symbol and inner border must be black.

[Amdt. 172-123, 56 FR 66264, Dec. 20, 1991, as amended at 65 FR 58627, Sept. 29, 2000]

§ 172.560 CLASS 9 placard.

(a) Except for size and color the CLASS 9 (miscellaneous hazardous materials) placard must be as follows:



(b) In addition to conformance with §172.519, the background on the CLASS 9 placard must be white with seven black vertical stripes on the top half extending from the top of the placard to one inch above the horizontal centerline. The black vertical stripes must be spaced so that, visually, they appear equal in width to the six white spaces between them. The space below the vertical lines must be white with the class number 9 underlined and centered at the bottom.

[Amdt. 172-123, 56 FR 66264, Dec. 20, 1991, as amended at 57 FR 45460, Oct. 1, 1992]

Subpart G—Emergency Response Information

§172.600 Applicability and general requirements.

(a) *Scope.* Except as provided in paragraph (d) of this section, this subpart prescribes requirements for providing and maintaining emergency response information during transportation and at facilities where hazardous materials are loaded for transportation, stored incidental to transportation or otherwise handled during any phase of transportation.

(b) *Applicability.* This subpart applies to persons who offer for transportation, accept for transportation, transfer or otherwise handle hazardous materials during transportation.

(c) *General requirements.* No person to whom this subpart applies may offer for transportation, accept for transportation, transfer, store or otherwise handle during transportation a hazardous material unless:

(1) Emergency response information conforming to this subpart is immediately available for use at all times the hazardous material is present; and

(2) Emergency response information, including the emergency response telephone number, required by this subpart is immediately available to any person who, as a representative of a Federal, State or local government agency, responds to an incident involving a hazardous material, or is conducting an investigation which involves a hazardous material.

(d) *Exceptions.* The requirements of this subpart do not apply to hazardous material which is excepted from the

shipping paper requirements of this subchapter or a material properly classified as an ORM-D.

[Amdt. 172-116, 54 FR 27145, June 27, 1989; 54 FR 28750, July 5, 1989, as amended at 55 FR 33712, Aug. 17, 1990; 172-127, 59 FR 49133, Sept. 26, 1994; Amdt. 172-149, 61 FR 27173, May 30, 1996]

§172.602 Emergency response information.

(a) *Information required.* For purposes of this subpart, the term "emergency response information" means information that can be used in the mitigation of an incident involving hazardous materials and, as a minimum, must contain the following information:

(1) The basic description and technical name of the hazardous material as required by §§172.202 and 172.203(k), the ICAO Technical Instructions, the IMDG Code, or the TDG Regulations, as appropriate (IBR, see §171.7 of this subchapter);

(2) Immediate hazards to health;

(3) Risks of fire or explosion;

(4) Immediate precautions to be taken in the event of an accident or incident;

(5) Immediate methods for handling fires;

(6) Initial methods for handling spills or leaks in the absence of fire; and

(7) Preliminary first aid measures.

(b) *Form of information.* The information required for a hazardous material by paragraph (a) of this section must be:

(1) Printed legibly in English;

(2) Available for use away from the package containing the hazardous material; and

(3) Presented—

(i) On a shipping paper;

(ii) In a document, other than a shipping paper, that includes both the basic description and technical name of the hazardous material as required by §§172.202 and 172.203(k), the ICAO Technical Instructions, the IMDG Code, or the TDG Regulations, as appropriate, and the emergency response information required by this subpart (e.g., a material safety data sheet); or

(iii) Related to the information on a shipping paper, a written notification to pilot-in-command, or a dangerous cargo manifest, in a separate document

(e.g., an emergency response guidance document), in a manner that cross-references the description of the hazardous material on the shipping paper with the emergency response information contained in the document. Aboard aircraft, the ICAO “Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods” and, aboard vessels, the IMO “Emergency Procedures for Ships Carrying Dangerous Goods”, or equivalent documents, may be used to satisfy the requirements of this section for a separate document.

(c) *Maintenance of information.* Emergency response information shall be maintained as follows:

(1) *Carriers.* Each carrier who transports a hazardous material shall maintain the information specified in paragraph (a) of this section and §172.606 of this part in the same manner as prescribed for shipping papers, except that the information must be maintained in the same manner aboard aircraft as the notification of pilot-in-command, and aboard vessels in the same manner as the dangerous cargo manifest. This information must be immediately accessible to train crew personnel, drivers of motor vehicles, flight crew members, and bridge personnel on vessels for use in the event of incidents involving hazardous materials.

(2) *Facility operators.* Each operator of a facility where a hazardous material is received, stored or handled during transportation, shall maintain the information required by paragraph (a) of this section whenever the hazardous material is present. This information must be in a location that is immediately accessible to facility personnel in the event of an incident involving the hazardous material.

[Amdt. 172–116, 54 FR 27146, June 27, 1989; 54 FR 28750, July 5, 1989, as amended by Amdt. 172–116, 55 FR 875, Jan. 10, 1990; Amdt. 172–151, 62 FR 1234, Jan. 8, 1997; 66 FR 45379, Aug. 28, 2001; 68 FR 75741, Dec. 31, 2003]

§172.604 Emergency response telephone number.

(a) A person who offers a hazardous material for transportation must provide an emergency response telephone number, including the area code, for use in the event of an emergency in-

volving the hazardous material. For telephone numbers outside the United States, the international access code or the “+” (plus) sign, country code, and city code, as appropriate, must be included. The telephone number must be—

(1) Monitored at all times the hazardous material is in transportation, including storage incidental to transportation;

(2) The telephone number of a person who is either knowledgeable of the hazardous material being shipped and has comprehensive emergency response and incident mitigation information for that material, or has immediate access to a person who possesses such knowledge and information. A telephone number that requires a call back (such as an answering service, answering machine, or beeper device) does not meet the requirements of paragraph (a) of this section; and

(3) Entered on a shipping paper, as follows:

(i) Immediately following the description of the hazardous material required by subpart C of this part; or

(ii) Entered once on the shipping paper in a prominent, readily identifiable, and clearly visible manner that allows the information to be easily and quickly found, such as by highlighting, use of a larger font or a font that is a different color from other text and information, or otherwise setting the information apart to provide for quick and easy recognition. This provision may be used only if the telephone number applies to each hazardous material entered on the shipping paper, and if it is indicated that the telephone number is for emergency response information (for example: “EMERGENCY CONTACT: * * *”).

(b) The telephone number required by paragraph (a) of this section must be –

(1) The number of the person offering the hazardous material for transportation when that person is also the emergency response information provider (ERI provider). The name of the person, or contract number or other unique identifier assigned by an ERI provider, identified with the emergency response telephone number must be entered on the shipping paper immediately before, after, above, or below

the emergency response telephone number unless the name is entered elsewhere on the shipping paper in a prominent, readily identifiable, and clearly visible manner that allows the information to be easily and quickly found; or

(2) The number of an agency or organization capable of, and accepting responsibility for, providing the detailed information required by paragraph (a)(2) of this section. The person who is registered with the ERI provider must ensure that the agency or organization has received current information on the material before it is offered for transportation. The person who is registered with the ERI provider must be identified by name, or contract number or other unique identifier assigned by the ERI provider, on the shipping paper immediately before, after, above, or below the emergency response telephone number in a prominent, readily identifiable, and clearly visible manner that allows the information to be easily and quickly found, unless the name or identifier is entered elsewhere in a prominent manner as provided in paragraph (b)(1) of this section.

(c) A person preparing shipping papers for continued transportation in commerce must include the information required by this section. If the person preparing shipping papers for continued transportation in commerce elects to assume responsibility for providing the emergency response telephone number required by this section, the person must ensure that all the requirements of this section are met.

(d) The requirements of this section do not apply to—

(1) Hazardous materials that are offered for transportation under the provisions applicable to limited quantities; and

(2) Materials properly described under the following shipping names:

Battery powered equipment.
 Battery powered vehicle.
 Carbon dioxide, solid.
 Castor bean.
 Castor flake.
 Castor meal.
 Castor pomace.
 Consumer commodity.
 Dry ice.
 Engines, internal combustion.

Fish meal, stabilized.

Fish scrap, stabilized.

Refrigerating machine.

Vehicle, flammable gas powered.

Vehicle, flammable liquid powered.

Wheelchair, electric.

(3) Transportation vehicles or freight containers containing lading that has been fumigated and displaying the FUMIGANT marking (see §172.302(g)) as required by §173.9 of this subchapter, unless other hazardous materials are present in the cargo transport unit.

[74 FR 53422, Oct. 19, 2009, as amended at 75 FR 53596, Sept. 1, 2010]

§ 172.606 Carrier information contact.

(a) Each carrier who transports or accepts for transportation a hazardous material for which a shipping paper is required shall instruct the operator of a motor vehicle, train, aircraft, or vessel to contact the carrier (e.g., by telephone or mobile radio) in the event of an incident involving the hazardous material.

(b) For transportation by highway, if a transport vehicle, (e.g., a semi-trailer or freight container-on-chassis) contains hazardous material for which a shipping paper is required and the vehicle is separated from its motive power and parked at a location other than a facility operated by the consignor or consignee or a facility (e.g., a carrier's terminal or a marine terminal) subject to the provisions of §172.602(c)(2), the carrier shall—

(1) Mark the transport vehicle with the telephone number of the motor carrier on the front exterior near the brake hose and electrical connections or on a label, tag, or sign attached to the vehicle at the brake hose or electrical connection; or

(2) Have the shipping paper and emergency response information readily available on the transport vehicle.

(c) The requirements specified in paragraph (b) of this section do not apply to an unattended motor vehicle separated from its motive power when the motor vehicle is marked on an orange panel, a placard, or a plain white square-on-point configuration with the identification number of each hazardous material loaded therein, and the

marking or placard is visible on the outside of the motor vehicle.

[Amdt. 172-151, 62 FR 1234, Jan. 8, 1997, as amended at 62 FR 39398 and 39409, July 22, 1997; 63 FR 16076, Apr. 1, 1998]

Subpart H—Training

SOURCE: Amdt. 172-126, 57 FR 20952, May 15, 1992, unless otherwise noted.

§ 172.700 Purpose and scope.

(a) *Purpose.* This subpart prescribes requirements for training hazmat employees.

(b) *Scope.* Training as used in this subpart means a systematic program that ensures a hazmat employee has familiarity with the general provisions of this subchapter, is able to recognize and identify hazardous materials, has knowledge of specific requirements of this subchapter applicable to functions performed by the employee, and has knowledge of emergency response information, self-protection measures and accident prevention methods and procedures (see § 172.704).

(c) *Modal-specific training requirements.* Additional training requirements for the individual modes of transportation are prescribed in parts 174, 175, 176, and 177 of this subchapter.

§ 172.701 Federal-State relationship.

This subpart and the parts referenced in § 172.700(c) prescribe minimum training requirements for the transportation of hazardous materials. For motor vehicle drivers, however, a State may impose more stringent training requirements only if those requirements—

(a) Do not conflict with the training requirements in this subpart and in part 177 of this subchapter; and

(b) Apply only to drivers domiciled in that State.

§ 172.702 Applicability and responsibility for training and testing.

(a) A hazmat employer shall ensure that each of its hazmat employees is trained in accordance with the requirements prescribed in this subpart.

(b) Except as provided in § 172.704(c)(1), a hazmat employee who performs any function subject to the

requirements of this subchapter may not perform that function unless instructed in the requirements of this subchapter that apply to that function. It is the duty of each hazmat employer to comply with the applicable requirements of this subchapter and to thoroughly instruct each hazmat employee in relation thereto.

(c) Training may be provided by the hazmat employer or other public or private sources.

(d) A hazmat employer shall ensure that each of its hazmat employees is tested by appropriate means on the training subjects covered in § 172.704.

[Amdt. 172-126, 57 FR 20952, May 15, 1992; 57 FR 22182, May 27, 1992, as amended by Amdt. 172-149, 61 FR 27173, May 30, 1996]

§ 172.704 Training requirements.

(a) Hazmat employee training must include the following:

(1) *General awareness/familiarization training.* Each hazmat employee shall be provided general awareness/familiarization training designed to provide familiarity with the requirements of this subchapter, and to enable the employee to recognize and identify hazardous materials consistent with the hazard communication standards of this subchapter.

(2) *Function-specific training.* (i) Each hazmat employee must be provided function-specific training concerning requirements of this subchapter, or exemptions or special permits issued under subchapter A of this chapter, that are specifically applicable to the functions the employee performs.

(ii) As an alternative to function-specific training on the requirements of this subchapter, training relating to the requirements of the ICAO Technical Instructions and the IMDG Code may be provided to the extent such training addresses functions authorized by subpart C of part 171 of this subchapter.

(3) *Safety training.* Each hazmat employee shall receive safety training concerning—

(i) Emergency response information required by subpart G of part 172;

(ii) Measures to protect the employee from the hazards associated with hazardous materials to which they may be exposed in the work place, including

specific measures the hazmat employer has implemented to protect employees from exposure; and

(iii) Methods and procedures for avoiding accidents, such as the proper procedures for handling packages containing hazardous materials.

(4) *Security awareness training.* No later than the date of the first scheduled recurrent training after March 25, 2003, and in no case later than March 24, 2006, each hazmat employee must receive training that provides an awareness of security risks associated with hazardous materials transportation and methods designed to enhance transportation security. This training must also include a component covering how to recognize and respond to possible security threats. After March 25, 2003, new hazmat employees must receive the security awareness training required by this paragraph within 90 days after employment.

(5) *In-depth security training.* Each hazmat employee of a person required to have a security plan in accordance with subpart I of this part who handles hazardous materials covered by the plan, performs a regulated function related to the hazardous materials covered by the plan, or is responsible for implementing the plan must be trained concerning the security plan and its implementation. Security training must include company security objectives, organizational security structure, specific security procedures, specific security duties and responsibilities for each employee, and specific actions to be taken by each employee in the event of a security breach.

(b) *OSHA, EPA, and other training.* Training conducted by employers to comply with the hazard communication programs required by the Occupational Safety and Health Administration of the Department of Labor (29 CFR 1910.120 or 1910.1200) or the Environmental Protection Agency (40 CFR 311.1), or training conducted by employers to comply with security training programs required by other Federal or international agencies, may be used to satisfy the training requirements in paragraph (a) of this section to the extent that such training addresses the

training components specified in paragraph (a) of this section.

(c) *Initial and recurrent training—(1) Initial training.* A new hazmat employee, or a hazmat employee who changes job functions may perform those functions prior to the completion of training provided—

(i) The employee performs those functions under the direct supervision of a properly trained and knowledgeable hazmat employee; and

(ii) The training is completed within 90 days after employment or a change in job function.

(2) *Recurrent training.* A hazmat employee must receive the training required by this subpart at least once every three years. For in-depth security training required under paragraph (a)(5) of this section, a hazmat employee must be trained at least once every three years or, if the security plan for which training is required is revised during the three-year recurrent training cycle, within 90 days of implementation of the revised plan.

(3) *Relevant Training.* Relevant training received from a previous employer or other source may be used to satisfy the requirements of this subpart provided a current record of training is obtained from hazmat employees' previous employer.

(4) *Compliance.* Each hazmat employer is responsible for compliance with the requirements of this subchapter regardless of whether the training required by this subpart has been completed.

(d) *Recordkeeping.* A record of current training, inclusive of the preceding three years, in accordance with this section shall be created and retained by each hazmat employer for as long as that employee is employed by that employer as a hazmat employee and for 90 days thereafter. The record shall include:

(1) The hazmat employee's name;

(2) The most recent training completion date of the hazmat employee's training;

(3) A description, copy, or the location of the training materials used to meet the requirements in paragraph (a) of this section;

(4) The name and address of the person providing the training; and

(5) Certification that the hazmat employee has been trained and tested, as required by this subpart.

(e) *Limitations.* The following limitations apply:

(1) A hazmat employee who repairs, modifies, reconditions, or tests packagings, as qualified for use in the transportation of hazardous materials, and who does not perform any other function subject to the requirements of this subchapter, is not subject to the training requirement of paragraph (a)(3) of this section.

(2) A railroad maintenance-of-way employee or railroad signalman, who does not perform any function subject to the requirements of this subchapter, is not subject to the training requirements of paragraphs (a)(2), (a)(4), or (a)(5) of this section. Initial training for a railroad maintenance-of-way employee or railroad signalman in accordance with this section must be completed by October 1, 2006.

[Amdt. 172-126, 57 FR 20952, May 15, 1992, as amended by Amdt. 172-126, 58 FR 5851, Jan. 22, 1993; Amdt. 172-145, 60 FR 49110, Sept. 21, 1995; Amdt. 172-149, 61 FR 27173, May 30, 1996; 65 FR 50460, Aug. 18, 2000; 68 FR 14521, Mar. 25, 2003; 70 FR 73164, Dec. 9, 2005; 73 FR 4716, Jan. 28, 2008; 73 FR 57005, Oct. 1, 2008; 75 FR 10988, Mar. 9, 2010]

Subpart I—Safety and Security Plans

SOURCE: 68 FR 14521, Mar. 25, 2003, unless otherwise noted.

§ 172.800 Purpose and applicability.

(a) *Purpose.* This subpart prescribes requirements for development and implementation of plans to address security risks related to the transportation of hazardous materials in commerce.

(b) *Applicability.* Each person who offers for transportation in commerce or transports in commerce one or more of the following hazardous materials must develop and adhere to a transportation security plan for hazardous materials that conforms to the requirements of this subpart. As used in this section, “large bulk quantity” refers to a quantity greater than 3,000 kg (6,614 pounds) for solids or 3,000 liters (792 gallons) for liquids and gases in a single packaging such as a cargo tank

motor vehicle, portable tank, tank car, or other bulk container.

(1) Any quantity of a Division 1.1, 1.2, or 1.3 material;

(2) A quantity of a Division 1.4, 1.5, or 1.6 material requiring placarding in accordance with subpart F of this part;

(3) A large bulk quantity of Division 2.1 material;

(4) A large bulk quantity of Division 2.2 material with a subsidiary hazard of 5.1;

(5) Any quantity of a material poisonous by inhalation, as defined in §171.8 of this subchapter;

(6) A large bulk quantity of a Class 3 material meeting the criteria for Packing Group I or II;

(7) A quantity of desensitized explosives meeting the definition of Division 4.1 or Class 3 material requiring placarding in accordance with subpart F of this part;

(8) A large bulk quantity of a Division 4.2 material meeting the criteria for Packing Group I or II;

(9) A quantity of a Division 4.3 material requiring placarding in accordance with subpart F of this part;

(10) A large bulk quantity of a Division 5.1 material in Packing Groups I and II; perchlorates; or ammonium nitrate, ammonium nitrate fertilizers, or ammonium nitrate emulsions, suspensions, or gels;

(11) Any quantity of organic peroxide, Type B, liquid or solid, temperature controlled;

(12) A large bulk quantity of Division 6.1 material (for a material poisonous by inhalation see paragraph (5) above);

(13) A select agent or toxin regulated by the Centers for Disease Control and Prevention under 42 CFR part 73 or the United States Department of Agriculture under 9 CFR part 121;

(14) A quantity of uranium hexafluoride requiring placarding under §172.505(b);

(15) International Atomic Energy Agency (IAEA) Code of Conduct Category 1 and 2 materials including Highway Route Controlled quantities as defined in 49 CFR 173.403 or known as radionuclides in forms listed as RAM-QC by the Nuclear Regulatory Commission;

(16) A large bulk quantity of Class 8 material meeting the criteria for Packing Group I.

(c) *Exceptions.* Transportation activities of a farmer, who generates less than \$500,000 annually in gross receipts from the sale of agricultural commodities or products, are not subject to this subpart if such activities are:

- (1) Conducted by highway or rail;
- (2) In direct support of their farming operations; and
- (3) Conducted within a 150-mile radius of those operations.

[68 FR 14521, Mar. 25, 2003, as amended at 70 FR 73164, Dec. 9, 2005; 71 FR 32258, June 2, 2006; 75 FR 10988, Mar. 9, 2010; 75 FR 53597, Sept. 1, 2010]

§ 172.802 Components of a security plan.

(a) The security plan must include an assessment of transportation security risks for shipments of the hazardous materials listed in § 172.800, including site-specific or location-specific risks associated with facilities at which the hazardous materials listed in § 172.800 are prepared for transportation, stored, or unloaded incidental to movement, and appropriate measures to address the assessed risks. Specific measures put into place by the plan may vary commensurate with the level of threat at a particular time. At a minimum, a security plan must include the following elements:

(1) *Personnel security.* Measures to confirm information provided by job applicants hired for positions that involve access to and handling of the hazardous materials covered by the security plan. Such confirmation system must be consistent with applicable Federal and State laws and requirements concerning employment practices and individual privacy.

(2) *Unauthorized access.* Measures to address the assessed risk that unauthorized persons may gain access to the hazardous materials covered by the security plan or transport conveyances being prepared for transportation of the hazardous materials covered by the security plan.

(3) *En route security.* Measures to address the assessed security risks of shipments of hazardous materials covered by the security plan en route from

origin to destination, including shipments stored incidental to movement.

(b) The security plan must also include the following:

(1) Identification by job title of the senior management official responsible for overall development and implementation of the security plan;

(2) Security duties for each position or department that is responsible for implementing the plan or a portion of the plan and the process of notifying employees when specific elements of the security plan must be implemented; and

(3) A plan for training hazmat employees in accordance with § 172.704 (a)(4) and (a)(5) of this part.

(c) The security plan, including the transportation security risk assessment developed in accordance with paragraph (a) of this section, must be in writing and must be retained for as long as it remains in effect. The security plan must be reviewed at least annually and revised and/or updated as necessary to reflect changing circumstances. The most recent version of the security plan, or portions thereof, must be available to the employees who are responsible for implementing it, consistent with personnel security clearance or background investigation restrictions and a demonstrated need to know. When the security plan is updated or revised, all employees responsible for implementing it must be notified and all copies of the plan must be maintained as of the date of the most recent revision.

(d) Each person required to develop and implement a security plan in accordance with this subpart must maintain a copy of the security plan (or an electronic file thereof) that is accessible at, or through, its principal place of business and must make the security plan available upon request, at a reasonable time and location, to an authorized official of the Department of Transportation or the Department of Homeland Security.

[68 FR 14521, Mar. 25, 2003, as amended at 75 FR 10989, Mar. 9, 2010]

§ 172.804 Relationship to other Federal requirements.

To avoid unnecessary duplication of security requirements, security plans

that conform to regulations, standards, protocols, or guidelines issued by other Federal agencies, international organizations, or industry organizations may be used to satisfy the requirements in this subpart, provided such security plans address the requirements specified in this subpart.

§ 172.820 Additional planning requirements for transportation by rail.

(a) *General.* Each rail carrier transporting in commerce one or more of the following materials is subject to the additional safety and security planning requirements of this section:

(1) More than 2,268 kg (5,000 lbs) in a single carload of a Division 1.1, 1.2 or 1.3 explosive;

(2) A quantity of a material poisonous by inhalation in a single bulk packaging; or

(3) A highway route-controlled quantity of a Class 7 (radioactive) material, as defined in §173.403 of this subchapter.

(b) *Commodity data.* Not later than 90 days after the end of each calendar year, a rail carrier must compile commodity data for the previous calendar year for the materials listed in paragraph (a) of this section, except that for calendar year 2008, data may be compiled for the 6-month period beginning July 1, 2008. The following stipulations apply to data collected:

(1) Commodity data must be collected by route, a line segment or series of line segments as aggregated by the rail carrier. Within the rail carrier selected route, the commodity data must identify the geographic location of the route and the total number of shipments by UN identification number for the materials specified in paragraph (a) of this section.

(2) A carrier may compile commodity data, by UN number, for all Class 7 materials transported (instead of only highway route controlled quantities of Class 7 materials) and for all Division 6.1 materials transported (instead of only Division 6.1 poison inhalation hazard materials).

(c) *Rail transportation route analysis.* For each calendar year, a rail carrier must analyze the safety and security risks for the transportation route(s), identified in the commodity data col-

lected as required by paragraph (b) of this section. The route analysis must be in writing and include the factors contained in Appendix D to this part, as applicable.

(1) The safety and security risks present must be analyzed for the route and railroad facilities along the route. For purposes of this section, railroad facilities are railroad property including, but not limited to, classification and switching yards, storage facilities, and non-private sidings. This term does not include an offeror's facility, private track, private siding, or consignee's facility.

(2) In performing the analysis required by this paragraph, the rail carrier must seek relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity to the route(s) utilized. If a rail carrier is unable to acquire relevant information from state, local, or tribal officials, then it must document that in its analysis. For purposes of this section, a high-consequence target means a property, natural resource, location, area, or other target designated by the Secretary of Homeland Security that is a viable terrorist target of national significance, the attack of which by railroad could result in catastrophic loss of life, significant damage to national security or defense capabilities, or national economic harm.

(d) *Alternative route analysis.* (1) For each calendar year, a rail carrier must identify practicable alternative routes over which it has authority to operate, if an alternative exists, as an alternative route for each of the transportation routes analyzed in accordance with paragraph (c) of this section. The carrier must perform a safety and security risk assessment of the alternative routes for comparison to the route analysis prescribed in paragraph (c) of this section. The alternative route analysis must be in writing and include the criteria in Appendix D of this part. When determining practicable alternative routes, the rail carrier must consider the use of interchange agreements with other rail carriers. The written alternative route analysis must also consider:

(i) Safety and security risks presented by use of the alternative route(s);

(ii) Comparison of the safety and security risks of the alternative(s) to the primary rail transportation route, including the risk of a catastrophic release from a shipment traveling along each route;

(iii) Any remediation or mitigation measures implemented on the primary or alternative route(s); and

(iv) Potential economic effects of using the alternative route(s), including but not limited to the economics of the commodity, route, and customer relationship.

(2) In performing the analysis required by this paragraph, the rail carrier should seek relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity to the alternative routes. If a rail carrier determines that it is not appropriate to seek such relevant information, then it must explain its reasoning for that determination in its analysis.

(e) *Route Selection.* A carrier must use the analysis performed as required by paragraphs (c) and (d) of this section to select the route to be used in moving the materials covered by paragraph (a) of this section. The carrier must consider any remediation measures implemented on a route. Using this process, the carrier must at least annually review and select the practicable route posing the least overall safety and security risk. The rail carrier must retain in writing all route review and selection decision documentation and restrict the distribution, disclosure, and availability of information contained in the route analysis to covered persons with a need-to-know, as described in parts 15 and 1520 of this title. This documentation should include, but is not limited to, comparative analyses, charts, graphics or rail system maps.

(f) *Completion of route analyses.* (1) Rail carriers have the following options for completing the initial route analysis, alternative route analysis, and route selection process required under paragraphs (c), (d), and (e) of this section:

(i) A rail carrier may complete the initial process by September 1, 2009, using data for the six month period from July 1, 2008 to December 31, 2008; or

(ii) A rail carrier may complete the initial process by March 31, 2010, using data for all of 2008, provided the rail carrier notifies the FRA Associate Administrator of Safety in writing by September 1, 2009 that it has chosen this second option.

(2) Beginning in 2010, the rail transportation route analysis, alternative route analysis, and route selection process required under paragraphs (c), (d), and (e) of this section must be completed no later than the end of the calendar year following the year to which the analyses apply.

(3) The initial analysis and route selection determinations required under paragraphs (c), (d), and (e) of this section must include a comprehensive review of the entire system. Subsequent analyses and route selection determinations required under paragraphs (c), (d), and (e) of this section must include a comprehensive, system-wide review of all operational changes, infrastructure modifications, traffic adjustments, changes in the nature of high-consequence targets located along, or in proximity to, the route, and any other changes affecting the safety or security of the movements of the materials specified in paragraph (a) of this section that were implemented during the calendar year.

(4) A rail carrier need not perform a rail transportation route analysis, alternative route analysis, or route selection process for any hazardous material other than the materials specified in paragraph (a) of this section.

(g) *Rail carrier point of contact on routing issues.* Each rail carrier must identify a point of contact (including the name, title, phone number and e-mail address) on routing issues involving the movement of materials covered by this section in its security plan and provide this information to:

(1) State and/or regional Fusion Centers that have been established to coordinate with state, local and tribal officials on security issues and which are located within the area encompassed by the rail carrier's rail system; and

(2) State, local, and tribal officials in jurisdictions that may be affected by a rail carrier's routing decisions and who directly contact the railroad to discuss routing decisions.

(h) *Storage, delays in transit, and notification.* With respect to the materials specified in paragraph (a) of this section, each rail carrier must ensure the safety and security plan it develops and implements under this subpart includes all of the following:

(1) A procedure under which the rail carrier must consult with offerors and consignees in order to develop measures for minimizing, to the extent practicable, the duration of any storage of the material incidental to movement (see § 171.8 of this subchapter).

(2) Measures to prevent unauthorized access to the materials during storage or delays in transit.

(3) Measures to mitigate risk to population centers associated with in-transit storage.

(4) Measures to be taken in the event of an escalating threat level for materials stored in transit.

(5) Procedures for notifying the consignee in the event of a significant delay during transportation; such notification must be completed within 48 hours after the carrier has identified the delay and must include a revised delivery schedule. A significant delay is one that compromises the safety or security of the hazardous material or delays the shipment beyond its normal expected or planned shipping time. Notification should be made by a method acceptable to both the rail carrier and consignee.

(i) *Recordkeeping.* (1) Each rail carrier must maintain a copy of the information specified in paragraphs (b), (c), (d), (e), and (f) of this section (or an electronic image thereof) that is accessible at, or through, its principal place of business and must make the record available upon request, at a reasonable time and location, to an authorized official of the Department of Transportation or the Department of Homeland Security. Records must be retained for a minimum of two years.

(2) Each rail carrier must restrict the distribution, disclosure, and availability of information collected or developed in accordance with paragraphs

(c), (d), (e), and (f) of this section to covered persons with a need-to-know, as described in parts 15 and 1520 of this title.

(j) *Compliance and enforcement.* If the carrier's route selection documentation and underlying analyses are found to be deficient, the carrier may be required to revise the analyses or make changes in route selection. If DOT finds that a chosen route is not the safest and most secure practicable route available, the FRA Associate Administrator for Safety, in consultation with TSA, may require the use of an alternative route. Prior to making such a determination, FRA and TSA will consult with the Surface Transportation Board (STB) regarding whether the contemplated alternative route(s) would be economically practicable.

[73 FR 20771, April 16, 2008, as amended at 73 FR 72193, Dec. 26, 2008]

§ 172.822 Limitation on actions by states, local governments, and Indian tribes.

A law, order, or other directive of a state, political subdivision of a state, or an Indian tribe that designates, limits, or prohibits the use of a rail line (other than a rail line owned by a state, political subdivision of a state, or an Indian tribe) for the transportation of hazardous materials, including, but not limited to, the materials specified in § 172.820(a), is preempted. 49 U.S.C. 5125, 20106.

[73 FR 20772, April 16, 2008]

APPENDIX A TO PART 172—OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION COLOR TOLERANCE CHARTS AND TABLES

The following are Munsell notations and Commission Internationale de L'Eclairage (CIE) coordinates which describe the Office of Hazardous Materials Transportation Label and Placard Color Tolerance Charts in tables 1 and 2, and the CIE coordinates for the color tolerances specified in table 3. Central colors and tolerances described in table 2 approximate those described in table 1 while allowing for differences in production methods and materials used to manufacture labels and placards surfaced with printing inks. Primarily, the color charts based on table 1 are for label or placard colors applied as opaque coatings such as paint, enamel or plastic, whereas color charts based on table

2 are intended for use with labels and placards surfaced only with inks.

For labels printed directly on packaging surfaces, table 3 may be used, although compliance with either table 1 or table 2 is sufficient. However, if visual reference indicates

that the colors of labels printed directly on package surfaces are outside the table 1 or 2 tolerances, a spectrophotometer or other instrumentation may be required to insure compliance with table 3.

TABLE 1—SPECIFICATIONS FOR COLOR TOLERANCE CHARTS FOR USE WITH LABELS AND PLACARDS SURFACED WITH PAINT, LACQUER, ENAMEL, PLASTIC, OTHER OPAQUE COATINGS, OR INK¹

Color	Munsell notations	CIE data for source C		
		Y	x	y
Red:				
Central color	7.5R 4.0/14	12.00	.5959	.3269
Orange	8.5R 4.0/14	12.00	.6037	.3389
Purple and vivid	6.5R 4.0/14	12.00	.5869	.3184
Grayish	7.5R 4.0/12	12.00	.5603	.3321
Vivid	7.5R 4.0/16	12.00	.6260	.3192
Light	7.5R 4.5/14	15.57	.5775	.3320
Dark	7.5R 3.5/14	09.00	.6226	.3141
Orange:				
Central color	5.OYR 6.0/15	30.05	.5510	.4214
Yellow and Grayish	6.25YR 6.0/15	30.05	.5452	.4329
Red and vivid	3.75YR 6.0/15	30.05	.5552	.4091
Grayish	5.OYR 6.0/13	30.05	.5311	.4154
Vivid	5.OYR 6.0/16	30.05	.5597	.4239
Light	5.OYR 6.5/15	36.20	.5427	.4206
Dark	5.OYR 5.5/15	24.58	.5606	.4218
Yellow:				
Central color	5.OY 8.0/12	59.10	.4562	.4788
Green	6.5Y 8.0/12	59.10	.4498	.4865
Orange and vivid	3.5Y 8.0/12	59.10	.4632	.4669
Grayish	5.OY 8.0/10	59.10	.4376	.4601
Vivid	5.OY 8.0/14	59.10	.4699	.4920
Light	5.OY 8.5/12	68.40	.4508	.4754
Dark	5.OY 7.5/12	50.68	.4620	.4823
Green:				
Central color	7.5G 4.0/9	12.00	.2111	.4121
Bluish	0.5BG 4.0/9	12.00	.1974	.3809
Green-yellow	5.0G 4.0/9	12.00	.2237	.4399
Grayish A	7.5G 4.0/7	12.00	.2350	.3922
Grayish B ²	7.5G 4.0/6	12.00	.2467	.3822
Vivid	7.5G 4.0/11	12.00	.1848	.4319
Light	7.5G 4.5/9	15.57	.2204	.4060
Dark	7.5G 3.5/9	09.00	.2027	.4163
Blue:				
Central color	2.5PB 3.5/10	09.00	.1691	.1744
Purple	4.5PB 3.5/10	09.00	.1796	.1711
Green and vivid	10.0B 3.5/10	09.00	.1557	.1815
Grayish	2.5PB 3.5/8	09.00	.1888	.1964
Vivid	2.5PB 3.5/12	09.00	.1516	.1547
Light	2.5PB 4.0/10	12.00	.1805	.1888
Dark	2.5PB 3.0/10	06.55	.1576	.1600
Purple:				
Central color	10.0P 4.5/10	15.57	.3307	.2245
Reddish purple	2.5RP 4.5/10	15.57	.3584	.2377
Blue purple	7.5P 4.5/10	15.57	.3068	.2145
Reddish gray	10.0P 4.5/8	15.57	.3280	.2391
Gray ²	10.0P 4.5/6.5	15.57	.3254	.2519
Vivid	10.0P 4.5/12	15.57	.3333	.2101
Light	10.0P 5.0/10	19.77	.3308	.2328
Dark	10.0P 4.0/10	12.00	.3306	.2162

¹ Maximum chroma is not limited.

² For the colors green and purple, the minimum saturation (chroma) limits for porcelain enamel on metal are lower than for most other surface coatings. Therefore, the minimum chroma limits of these two colors as displayed on the Charts for comparison to porcelain enamel on metal is low, as shown for green (grayish B) and purple (gray).

NOTE: CIE=Commission Internationale de L'Eclairage.

TABLE 2—SPECIFICATIONS FOR COLOR TOLERANCE CHARTS FOR USE WITH LABELS AND PLACARDS SURFACED WITH INK

Color/series	Munsell notation	CIE data for source C		
		Y	x	y
Red:				
Central series:				
Central color	6.8R 4.47/12.8	15.34	.5510	.3286
Grayish	7.2R 4.72/12.2	17.37	.5368	.3348
Purple	6.4R 4.49/12.7	15.52	.5442	.3258
Purple and vivid	6.1R 4.33/13.1	14.25	.5529	.3209
Vivid	6.7R 4.29/13.2	13.99	.5617	.3253
Orange	7.3R 4.47/12.8	15.34	.5572	.3331
Orange and grayish	7.65R 4.70/12.4	17.20	.5438	.3382
Light series:				
Light	7.0R 4.72/13.2	17.32	.5511	.3322
Light and orange	7.4R 4.96/12.6	19.38	.5365	.3382
Light and purple	6.6R 4.79/12.9	17.94	.5397	.3289
Dark series:				
Dark A	6.7R 4.19/12.5	13.30	.5566	.3265
Dark B	7.0R 4.25/12.35	13.72	.5522	.3294
Dark and purple	7.5R 4.23/12.4	13.58	.5577	.3329
Orange:				
Central series:				
Central color	5.0YR 6.10/12.15	31.27	.5193	.4117
Yellow and grayish A	5.8YR 6.22/11.7	32.69	.5114	.4155
Yellow and grayish B	6.1YR 6.26/11.85	33.20	.5109	.4190
Vivid	5.1YR 6.07/12.3	30.86	.5226	.4134
Red and vivid A	3.9YR 5.87/12.75	28.53	.5318	.4038
Red and vivid B	3.6YR 5.91/12.6	29.05	.5291	.4021
Grayish	4.9YR 6.10/11.9	31.22	.5170	.4089
Light series:				
Light and vivid A	5.8YR 6.78/12.7	39.94	.5120	.4177
Light and yellow	6.0YR 6.80/12.8	40.20	.5135	.4198
Light and vivid B	4.9YR 6.60/12.9	37.47	.5216	.4126
Dark series:				
Dark and yellow	5.8YR 5.98/11.0	29.87	.5052	.4132
Dark A	5.1YR 5.80/11.1	27.80	.5127	.4094
Dark B	5.0YR 5.80/11.0	27.67	.5109	.4068
Yellow:				
Central series:				
Central color	4.3Y 7.87/10.3	56.81	.4445	.4589
Vivid A	4.5Y 7.82/10.8	55.92	.4503	.4658
Vivid B	3.3Y 7.72/11.35	54.24	.4612	.4624
Vivid and orange	3.2Y 7.72/10.8	54.25	.4576	.4572
Grayish A	4.1Y 7.95/9.7	58.18	.4380	.4516
Grayish B	5.1Y 8.06/9.05	60.12	.4272	.4508
Green-yellow	5.2Y 7.97/9.9	58.53	.4356	.4605
Light series:				
Light	5.4Y 8.59/10.5	70.19	.4351	.4628
Light and green-yellow	5.4Y 8.56/11.2	69.59	.4414	.4692
Light and vivid	4.4Y 8.45/11.4	67.42	.4490	.4662
Dark series:				
Dark and green-yellow	4.4Y 7.57/9.7	51.82	.4423	.4562
Dark and orange A	3.4Y 7.39/10.4	48.86	.4584	.4590
Dark and orange B	3.5Y 7.41/10.0	49.20	.4517	.4544
Green:				
Central series:				
Central color	9.75G 4.26/7.75	13.80	.2214	.3791
Grayish	10G 4.46/7.5	15.25	.2263	.3742
Blue A	1.4BG 4.20/7.4	13.36	.2151	.3625
Blue B	1.0BG 4.09/7.75	12.60	.2109	.3685
Vivid	8.4G 4.09/8.05	12.59	.2183	.3954
Vivid green-yellow	7.0G 4.23/8.0	13.54	.2292	.4045
Green-yellow	7.85G 4.46/7.7	15.23	.2313	.3914
Light series:				
Light and vivid	9.5G 4.45/8.8	15.21	.2141	.3863
Light and blue	0.2BG 4.31/8.8	14.12	.2069	.3814
Light and green-yellow	8.3G 4.29/9.05	14.01	.2119	.4006
Dark series:				
Dark and green-yellow	7.1G 4.08/7.1	12.55	.2354	.3972
Dark and grayish	9.5G 4.11/6.9	12.70	.2282	.3764
Dark	8.5G 3.97/7.2	11.78	.2269	.3874

TABLE 2—SPECIFICATIONS FOR COLOR TOLERANCE CHARTS FOR USE WITH LABELS AND PLACARDS SURFACED WITH INK—Continued

Color/series	Munsell notation	CIE data for source C		
		Y	x	y
Blue:				
Central series:				
Central color	3.5PB 3.94/9.7	11.58	.1885	.1911
Green and grayish A	2.0PB 4.35/8.7	14.41	.1962	.2099
Green and grayish B	1.7PB 4.22/9.0	13.50	.1898	.2053
Vivid	2.9PB 3.81/9.7	10.78	.1814	.1852
Purple and vivid A	4.7PB 3.53/10.0	9.15	.1817	.1727
Purple and vivid B	5.0PB 3.71/9.9	10.20	.1888	.1788
Grayish	3.75PB 4.03/9.1	12.17	.1943	.1961
Light series:				
Light and green A	1.7PB 4.32/9.2	14.22	.1904	.2056
Light and green B	1.5PB 4.11/9.6	12.72	.1815	.1971
Light and vivid	3.2PB 3.95/10.05	11.70	.1831	.1868
Dark series:				
Dark and grayish	3.9PB 4.01/8.7	12.04	.1982	.1992
Dark and purple A	4.8PB 3.67/9.3	9.95	.1918	.1831
Dark and purple B	5.2PB 3.80/9.05	10.76	.1985	.1885
Purple:				
Central series:				
Central color	9.5P 4.71/11.3	17.25	.3274	.2165
Red	1.0RP 5.31/10.8	22.70	.3404	.2354
Red and vivid A	1.4RP 5.00/11.9	19.78	.3500	.2274
Red and vivid B	0.2RP 4.39/12.5	14.70	.3365	.2059
Vivid	8.0P 4.04/12.0	12.23	.3098	.1916
Blue	7.0P 4.39/10.8	14.71	.3007	.2037
Grayish	8.8P 5.00/10.3	19.73	.3191	.2251
Light series:				
Light and red A	0.85RP 5.56/11.1	25.18	.3387	.2356
Light and red B	1.1RP 5.27/12.3	22.27	.3460	.2276
Light and vivid	9.2P 4.94/11.95	19.24	.3247	.2163
Dark series:				
Dark and grayish	9.6P 4.70/10.9	17.19	.3283	.2204
Dark and vivid	8.4P 4.05/11.6	12.35	.3144	.1970
Dark and blue	7.5P 4.32/10.5	14.19	.3059	.2078

TABLE 3—SPECIFICATION FOR COLORS FOR USE WITH LABELS PRINTED ON PACKAGINGS SURFACES

CIE data for source C	Red	Orange	Yellow	Green	Blue	Purple
x	.424	.460	.417	.228	.200	.377
y	.306	.370	.392	.354	.175	.205
x	.571	.543	.490	.310	.255	.377
y	.306	.400	.442	.354	.250	.284
x	.424	.445	.390	.228	.177	.342
y	.350	.395	.430	.403	.194	.205
x	.571	.504	.440	.310	.230	.342
y	.350	.430	.492	.403	.267	.284
Y (high)	23.0	41.6	72.6	20.6	15.9	21.2
Y (low)	7.7	19.5	29.1	7.4	6.5	8.2

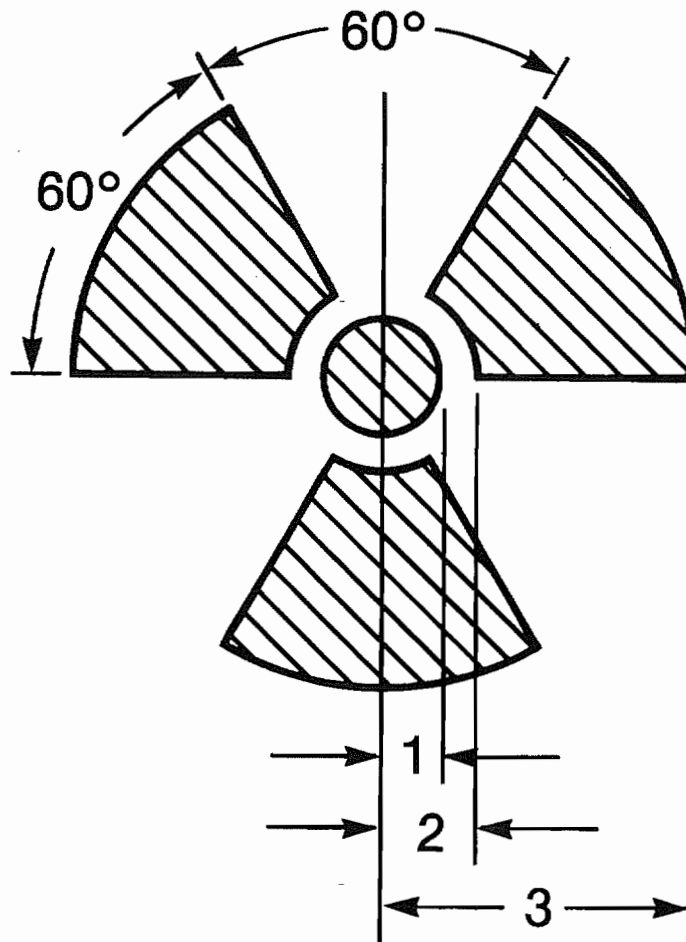
[Amdt. 172-50, 44 FR 9757, Feb. 15, 1979; Amdt. 172-50, 44 FR 10984, Feb. 26, 1979, as amended by Amdt. 172-50, 44 FR 22467, Apr. 16, 1979; 50 FR 45731, Nov. 1, 1985; Amdt. 172-127, 59 FR 49133, Sept. 26, 1994]

APPENDIX B TO PART 172—TREFOIL SYMBOL

1. Except as provided in paragraph 2 of this appendix, the trefoil symbol required for RADIOACTIVE labels and placards and required to be marked on certain packages of Class 7

materials must conform to the design and size requirements of this appendix.

2. RADIOACTIVE labels and placards that were printed prior to April 1, 1996, in conformance with the requirements of this subchapter in effect on March 30, 1996, may continue to be used.

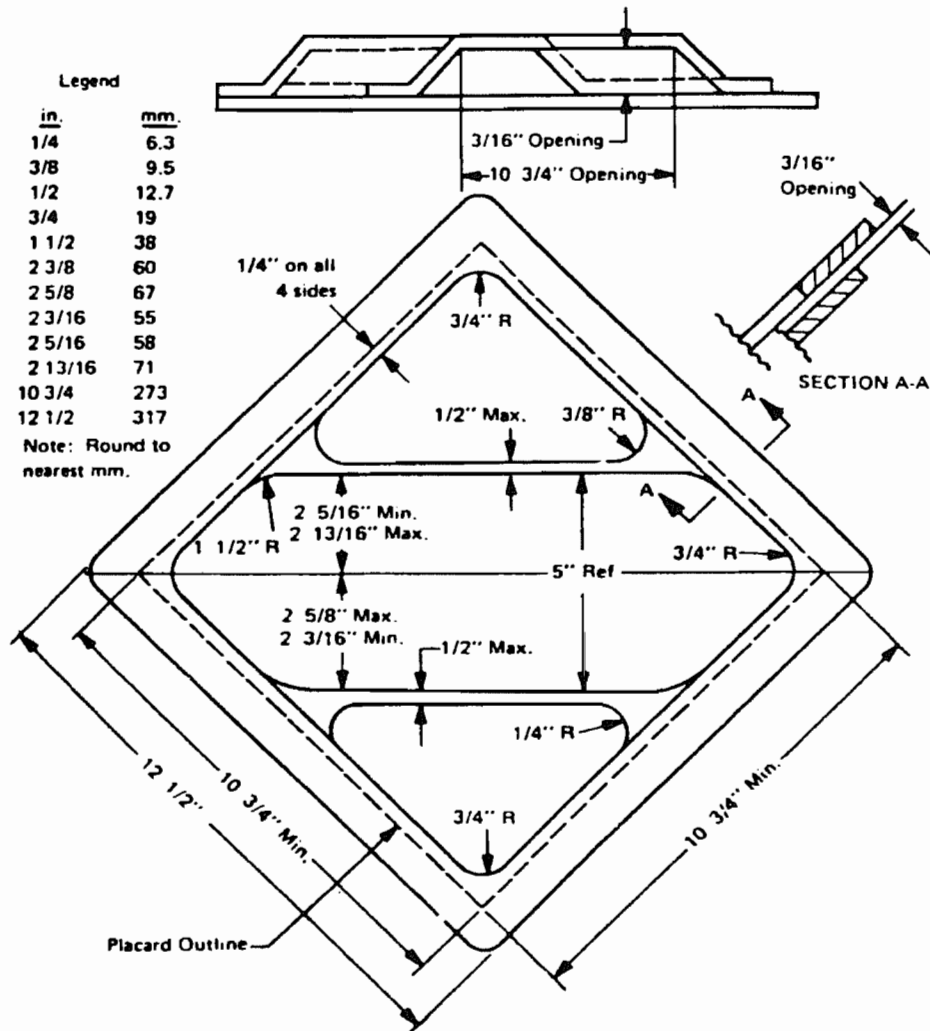


1=Radius of Circle—
Minimum dimensions
4 mm (0.16 inch) for markings and labels
12.5 mm (0.5 inch) for placards
2=1½ Radii

3=5 radii for markings and labels
4½ radii for placards.

[60 FR 50306, Sept. 28, 1995, as amended by
172-143, 61 FR 20750, May 8, 1996]

APPENDIX C TO PART 172—DIMENSIONAL SPECIFICATIONS FOR RECOMMENDED PLACARD HOLDER



APPENDIX D TO PART 172—RAIL RISK ANALYSIS FACTORS

A. This appendix sets forth the minimum criteria that must be considered by rail carriers when performing the safety and security risk analyses required by §172.820. The risk analysis to be performed may be quantitative, qualitative, or a combination of both. In addition to clearly identifying the hazardous material(s) and route(s) being analyzed, the analysis must provide a thorough

description of the threats, identified vulnerabilities, and mitigation measures implemented to address identified vulnerabilities.

B. In evaluating the safety and security of hazardous materials transport, selection of the route for transportation is critical. For the purpose of rail transportation route analysis, as specified in §172.820(c) and (d), a route may include the point where the carrier takes possession of the material and all track and railroad facilities up to the point

where the material is relinquished to another entity. Railroad facilities are railroad property including, but not limited to, classification and switching yards, storage facilities, and non-private sidings; however, they do not include an offeror's facility, private track, private siding, or consignee's facility. Each rail carrier must use best efforts to communicate with its shippers, consignees, and interlining partners to ensure the safety and security of shipments during all stages of transportation.

C. Because of the varying operating environments and interconnected nature of the rail system, each carrier must select and document the analysis method/model used and identify the routes to be analyzed.

D. The safety and security risk analysis must consider current data and information as well as changes that may reasonably be anticipated to occur during the analysis year. Factors to be considered in the performance of this safety and security risk analysis include:

1. Volume of hazardous material transported;
2. Rail traffic density;
3. Trip length for route;
4. Presence and characteristics of railroad facilities;
5. Track type, class, and maintenance schedule;
6. Track grade and curvature;
7. Presence or absence of signals and train control systems along the route ("dark" versus signaled territory);
8. Presence or absence of wayside hazard detectors;
9. Number and types of grade crossings;
10. Single versus double track territory;
11. Frequency and location of track turn-outs;
12. Proximity to iconic targets;
13. Environmentally sensitive or significant areas;
14. Population density along the route;
15. Venues along the route (stations, events, places of congregation);
16. Emergency response capability along the route;
17. Areas of high consequence along the route, including high consequence targets as defined in § 172.820(c);
18. Presence of passenger traffic along route (shared track);
19. Speed of train operations;
20. Proximity to en-route storage or repair facilities;
21. Known threats, including any non-public threat scenarios provided by the Department of Homeland Security or the Department of Transportation for carrier use in the development of the route assessment;
22. Measures in place to address apparent safety and security risks;
23. Availability of practicable alternative routes;

24. Past incidents;
25. Overall times in transit;
26. Training and skill level of crews; and
27. Impact on rail network traffic and congestion.

[73 FR 20772, April 16, 2008]

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

Subpart A—General

Sec.

- 173.1 Purpose and scope.
- 173.2 Hazardous materials classes and index to hazard class definitions.
- 173.2a Classification of a material having more than one hazard.
- 173.3 Packaging and exceptions.
- 173.4 Small quantity exceptions.
- 173.4a Excepted quantities.
- 173.5 Agricultural operations.
- 173.5a Oilfield service vehicles and mechanical displacement meter provers.
- 173.5b Portable and mobile refrigeration systems.
- 173.6 Materials of trade exceptions.
- 173.7 Government operations and materials.
- 173.8 Exceptions for non-specification packagings used in intrastate transportation.
- 173.9 Transport vehicles or freight containers containing lading which has been fumigated.
- 173.10 Tank car shipments.
- 173.12 Exceptions for shipment of waste materials.
- 173.13 Exceptions for Class 3, Divisions 4.1, 4.2, 4.3, 5.1, 6.1, and Classes 8 and 9 materials.

Subpart B—Preparation of Hazardous Materials for Transportation

- 173.21 Forbidden materials and packages.
- 173.22 Shipper's responsibility.
- 173.22a Use of packagings authorized under special permits.
- 173.23 Previously authorized packaging.
- 173.24 General requirements for packagings and packages.
- 173.24a Additional general requirements for non-bulk packagings and packages.
- 173.24b Additional general requirements for bulk packagings.
- 173.25 Authorized packagings and over-packs.
- 173.26 Quantity limitations.
- 173.27 General requirements for transportation by aircraft.
- 173.28 Reuse, reconditioning and remanufacture of packagings.
- 173.29 Empty packagings.
- 173.30 Loading and unloading of transport vehicles.