ILLINOIS POLLUTION CONTROL BOARD
February 23, 1989

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO PART 211 AND 215, LEAKS FROM SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING EQUIPMENT	)	R88-23

PROPOSED RULE. SECOND NOTICE.

OPINION AND ORDER OF THE BOARD (by J.D. Dumelle):

This matter comes before the Board upon an August 24, 1988, Joint Proposal filed simultaneously with a Joint Motion by the Illinois Environmental Protection Agency (Agency), Amoco Chemical Company (Amoco), the Dow Chemical Company (Dow), Mobil Chemical Company, Inc. (Mobil), and Stepan Company (Stepan), all of whom will be generally referred to as "Joint Proponents" or "Joint Movants". The joint motion requests the Board to conduct an expedited rulemaking on the joint proposal.

On September 8, 1988, the Board adopted the joint proposal for First Notice publication. First Notice was published on September 30, 1988 at 12 Ill. Reg. 15294 and 15412. After proper notice, public hearings were held December 9, 1988 in Joliet and December 20, 1988 in Chicago.

Six public comments were submitted in this proceeding. On November 2, 1988, public comment No. 1 was submitted by the Office of the Secretary of State, Administrative Code Unit. All of the corrections suggested by the Administrative Code Unit are incorporated at Second Notice. On November 22, 1988, the Illinois Department of Commerce and Community Affairs (DCCA) submitted its Small Business Assistance Bureau's Impact Analysis with respect to this rulemaking. DCCA determined that this rulemaking will have no economic effect on small businesses. At the conclusion of hearing, Dow and Mobil, with the assent of the other proponents, made a motion that an economic impact study (EcIS) be waived because there is sufficient information in the record. On December 27, 1988 the Department of Energy and Natural Resources (DENR) filed a Negative declaration stating that the net economic impact of the proposed regulation is favorable and the costs of compliance are small or are borne by the proponent of the regulation. The Board agrees with DENR and finds that an EcIS is not necessary to support these amendments. The Board, therefore, proceeds directly to Second Notice.

Procedural History

Section 172 of the Clean Air Act (CAA) requires each State in which there are areas where the National Ambient Air Quality Standards (NAAQS) are exceeded, i.e., nonattainment areas, to adopt and submit revisions to its State Implementation Plan (SIP) to the United States Environmental Protection Agency (USEPA). Section 172(a)(2) and (b)(3) of the CAA require states to adopt reasonably available control technology (RACT) requirements for existing stationary sources in nonattainment areas. In 1978, the USEPA gave notice at 43 Fed. Reg. 21673 that the SIPs must include enforceable regulations reflecting the application of RACT to those stationary source categories for which the USEPA has published control techniques guidelines (CTGs). As a result, legally enforceable RACT regulations were required to be submitted for all sources for which CTGs were published by January 1977.

In August, 1981, the USEPA published a draft CTG entitled "Control of Volatile Organic Fugitive Emissions from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment". This CTG was finalized, renamed, and published in March, 1984, as "Control of Volatile Organic Compound (VOC) Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment". This final CTG was submitted to the Illinois Pollution Control Board (Board) as an exhibit in the R86-39 proceedings.

In 1982, the Agency proposed regulations to the Board based on the draft CTG, which was the only Synthetic Organic Chemical and Manufacturing Industry (SOCMI) RACT guidance document available to the Agency. On August 21, 1985, the Board, in the R82-14 proceedings, adopted a revised version to the regulations, including Sections 215.421 through 215.429, at 35 Ill. Adm. Code Part 215, Subpart Q: Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment. On October 3, 1985, these regulations were submitted by the Agency to the USEPA as part of the revised Illinois ozone SIP.

The USEPA reviewed the Illinois proposed SIP revisions and concluded that the Illinois SOCMI leak rule needed major revisions in order to conform with the USEPA definition of RACT specified in the CTG for the SOCMI category. Specifically, the USEPA stated that the Illinois rule contained excessive exemptions and did not contain a quarterly leak detection and repair program.

The USEPA informed the IEPA in 1986 that the Illinois rules covering the SOCMI category did not implement RACT. In several letters, the USEPA cited the inadequacy of the Illinois ozone SIP, in part due to inadequate SOCMI regulations in Illinois. The USEPA also indicated that the Illinois revised ozone SIP would not be approved by the USEPA unless Illinois corrected its

rules to reflect RACT for various source categories, including the SOCMI category.

The Agency examined each of the deficiencies in the Illinois SOCMI regulations and drafted a proposal (R86-39) that was submitted to the Board on January 28, 1987, to correct the cited deficiencies. The Board subsequently adopted a revised version of these regulations on November 25, 1987. The regulations were then submitted to the USEPA as revisions to the Illinois SIP.

In January, 1988, four major SOCMI facilities that have plants in the Chicago and East St. Louis urbanized areas (Amoco, Dow, Mobil, and Stepan) filed variance petitions with the Board asserting, in part, the technical infeasibility and economic unreasonableness of complying with 35 Ill. Adm. Code 215.437(c), which regulates open-ended valves that serve as sampling connections. After numerous discussions with the companies regarding their processes and operations and many consultations with the USEPA concerning the RACT and New Source Performance Standard (NSPS) requirements for controlling volatile organic material (VOM) emissions from sampling connections, the Agency concluded that the companies' claims had merit. Based upon discussions with the four major SOCMI sources, the Agency also concluded that the control measures specified in Subsection 215.437(c) were not technically feasible nor economically reasonable for other, similar SOCMI facilities. The Agency thus proposed a revision to the regulation in conjunction with the companies rather then have the various Illinois SOCMI facilities seek site-specific relief.

VOM Emissions From Sampling Connections

Sampling connections in a SOCMI plant are used for withdrawing samples from process units for analyses. The purpose of periodically analyzing the samples from process streams is to evaluate process unit performance and to verify the purity and composition of feed stocks, intermediates, and final products. In order to obtain a representative sample for analysis, process fluid contained in the sampling line must be purged prior to sampling.

Unlike other equipment components in a SOCMI plant, the CTG did not specifically identify RACT for controlling VOM emissions from sampling connections, nor did it include sampling connections as the type of equipment components which may be exempted from RACT requirements. The CTG, however, did present the results of studies of sampling connection emissions (the emission factor and the sampling connection counts) indicating that they may be significant and are important. The Joint Proponents believe that the sampling connection controls set forth in the proposal will provide for the proper disposal of the purged process fluid, and will eliminate or reduce the VOM emissions from the purged process fluid.

The companies' major objections to the present rule related to 35 Ill. Adm. Code 215.437(c). This subsection requires that open-ended valves which serve as sampling connections be retrofitted with a closed purged system or a closed vent system, and that these systems be designed and operated in a manner such that the purged process fluid shall either be returned to the process line with zero VOM emissions or be collected and recycled back to the process line with zero VOM emissions.

Amoco, Dow, and Mobil believe this regulation is not RACT because it is neither technologically feasible nor economically reasonable for their polymer manufacturing processes and operations. The unit processes in their plants involve polymerization of monomers. Their plants produce polystyrene, which is used as raw material for manufacturing various plastics and plastic foams. Styrene monomers, additives, and/or catalysts are introduced into the polymerization reactors and heated up to reaction temperature under specified pressure. The factors that affect the polymerization reaction are mainly the reaction temperature and the purity of the styrene. The polymerization unit process is very sensitive to the purity of raw materials and temperature. If the process fluid is allowed to remain in the closed purged or closed vent system, it could solidify at lower temperatures and thus plug the closed loop of the sampling system. If a closed purge sampling system is plugged by solid polymer, it will be useless for recycling and sampling without constant disassembling and cleaning. Even if the purged material can be recycled back to the reactor's process stream, impurities may be introduced into the process that will affect the quality of the product. In some cases, a run-away reaction or a line rupture may occur.

The objections of Stepan are somewhat different. Stepan's Elwood plant produces more than 300 types of intermediate and basic chemicals, which are mainly used in the soap and detergent industry, with some used in the polymer industry. Most of Stepan's raw materials and products have very low vapor pressures, and thus can be qualified as heavy liquids that are exempt from the requirements under Part 215.Subpart Q. Stepan does not specifically object to the requirement of a closed purge or closed vent sampling system in their variance petition. Stepan does object, however, to the lack of a component definition for open-ended valves.

After careful review of the CTG, discussions with the companies, and consultations with USEPA personnel, the Agency concluded that the Illinois requirements contained in 215.437(c) for controlling VOM emissions from sampling connections are more stringent than that required by the CTG since the CTG did not identify RACT for controlling VOM emissions from sampling connections. Based upon the information presented to the Agency by the companies, the Agency also concluded that the companies'

SOCMI unit processes may require special operating conditions and may not be able to tolerate slight impurities contained in the recycled purged process fluid that contaminate their process streams, rendering the designing and operation of a closed purge or closed vent system extremely difficult. Another aspect of the proposal is that in-situ sampling systems are exempt from the requirements of Section 215.437(c). Some SOCMI plants, due to the nature of their unit processes, can use in-situ sampling systems where the analyzing probes are implanted in the processing equipment and immersed in the process streams. The required process streams' chemical and/or physical properties analyses can then be done without extracting samples through sampling connections. A zero VOM emissions requirement or, as will be discussed later, a non detectable VOM emissions requirement can be achieved by this type of sampling system. The Agency thus believes that an in-situ sampling system should be exempt from Subsection 215.437(c).

Other amendments which relate to 215.437(c) include definitions for "closed purged system", "closed vent system", "control device", "in-situ sampling systems", and "purged process fluid". These technical terms are used either in 215.437(c) or in the proposed amendments to 215.437(c), but had not previously been defined. These terms are being defined in the rule to avoid confusion and to effectively implement the rule.

No Detectable VOM Emissions

A definition for "non detectable VOM emissions" has been added, and "zero VOM emissions" has been deleted. Dow, Mobil, Amoco, and Stepan object to the zero VOM emissions requirement in Subsection 215.437(c). These companies believe that it is impossible to comply with an absolute zero VOM emissions requirement. Similarly, Public Comment No. 3, submitted November 30, 1988 by Amoco Corporation, states that the use of "zero" is confusing because of the technical definition of zero. Amoco proposed that "zero" be replaced with "no detectable".

With regard to the zero VOM emissions requirement stated in Subsection 215.437(c), the Agency takes what it believes to be the USEPA's position, as stated in the NSPS, that the sampling connection control requirements are intended to cover the emissions from purged process fluid but not the small amount of emissions from the sample itself. Since absolute zero VOM emissions from purged process fluids and the samples may be technically impossible to achieve, the Agency believes that the term "zero VOM emissions" should be defined in the rule as VOM emitted into the atmosphere as indicated by an instrument reading at less than 500 ppm over background as determined in accordance with 40 CFR 60.485(c). The Agency states that this definition is essentially the same as the NSPS definition of "no detectable emissions".

The Board notes that there is no apparent disagreement as to the definition of the term employed in Section 215.437(c), but rather the disagreement is as to the term itself. The Board is persuaded that absolute zero VOM emission from purged process fluids and the samples is impossible to achieve and that requiring "zero" VOM emissions, however that term is defined, could be misleading to the community that must comply with these regulations. The Board prefers "no detectable" VOM emissions, as that term is, in and of itself, more accurate. The Board therefore has replaced "zero" with "no detectable" throughout the proposal at Second Notice.

Definitions

The Joint Proponents have proposed definitions in Section 211.122 for the following terms: "process unit," "liquids dripping," and "sensor" in Section 215.430; "synthetic organic chemical manufacturing of polymer plant" in Section 215.432; "process unit shut down" in subsection 215.435(a); and "pressure release" as it related to the term "pressure relief device" which is contained throughout the regulation. The USEPA also informed the Agency that it could not find the definition for "light liquid" in the Agency's ozone SIP. The Agency thus also proposed to include the existing definition of "light liquid" in this proposal. The Agency proposed to move this definition from Section 215.104 to Section 211.122 on the assumption that other SOCMI definitions in 215.104 would be moved to Section 211.122 during the Chapter 2 clean-up proceeding. Since that proceeding's time frame is indefinite, the Agency believes that the definition of light liquid should remain in Section 215.104.

Although the CTG did not define these terms, the Agency takes the position that these terms should be defined in the rule. Defining these terms will avoid confusion and disputes between the Agency and the regulated community arising from the differences in their interpretations of the terms. The Agency proposed the NSPS definitions because they have been scrutinized and agreed upon by the SOCMI industry through the Federal NSPS commenting process, and because these terms were not defined in the CTG. The Board accepts these definitions as proposed.

Miscellaneous Amendments

The Joint Proponents propose to change the exemption level found at Section 215.430 from "3660 mg/yr (4033 tons/yr) gaseous or light liquid volatile organic materials" to "3660 mg/yr (4033 tons/yr) gaseous and light liquid volatile organic materials". The determination of the process weight rate (PWR) exemption level in the rule and in the CTG is based on the combined gaseous and vapor volatile organic material PWRs. Their PWRs should not be considered separately as the word "or" in Section 215.430 implies. Thus, the word "or" is being changed to "and".

The Joint Proponents also suggest changing the term "equipment" to "component". Although the CTG uses the terms "equipment" and "component" interchangeably in practice, the term "component" usually refers to a subpart of a piece of equipment. Leaks may occur at one of the components of a piece of equipment. Since the term "component" has been defined in Section 211.122, the term "equipment" is being changed to "component" so that it will clearly indicate what component(s) of the equipment should be under leak detection and repair (LDAR) program requirements.

The Joint Proponents suggest adding to Section 215.430 the statement, "Those components that are not process unit components are exempt from Section 215.430 through 215.439". The CTG clearly indicates that RACT shall apply to "SOCMI process units". All the equipment component counts, VOM emissions, control technologies, and economic impact studies relate to the components of a piece of equipment that constitute a SOCMI process unit. Those equipment components that do not belong to a process unit should be exempted. Thus, their exemption is being explicitly stated in the rule.

The Joint Proponents suggest adding the phrase "in light liquid service" after the term "pump seal" in subsection 215.432(e). This addition exempts pump seal in heavy liquid service from instrument testing when liquids are observed dripping from pump seals. The Agency states that it agrees with industry that pumps in heavy liquid service from which liquid is observed dripping should not be tested before repairs. As it has been specified in subsection 215.432(g), components in heavy liquid service are exempt from routine instrument monitoring. Any component in heavy liquid service that it found to be leaking on the basis of sight, smell, or sound, however, should be repaired within 30 days after the leak is discovered. Thus, a pump seal in heavy liquid service from which a liquid is observed dripping should be repaired within the required time frame. It would not be necessary to test it before the repair is done. On the other hand, a pump seal in light liquid service from which liquid is observed dripping should be tested immediately before and after its repair to determine the instrument concentration reading in ppm at each point in time such that the non-leak or repaired definition of less than 10,000 ppm can be determined. An instrument monitoring test reading of a heavy liquid leak will be approximately 3000 ppm or less. This value is less than the RACT-defined leak level of 10,000 ppm.

The Joint Proponents suggest amending subsection 215.435(a) by the addition of the phrase "in light liquid service and in gas service" between the words "valves" and "inspected" in the second line of that subsection. Subsection 215.432(c) provides the regulated facilities with an alternate testing strategy for valves that are in gas service and in light liquid service. This

alternative strategy is generally referred to as "skip-period" monitoring. It should be applied only to those valves in light liquid service and in gas service, and it should be offered only to the SOCMI plants that have demonstrated that they have attained and maintained a good performance level for the specific values. A good performance level is attained if two percent or less of the valves that are in light liquid service and in gas service leak. If this level is attained for five consecutive quarters, then one or more of the subsequent quarterly LDAR period for those valves can be skipped. That is, a qualified plant owner or operator can conduct an annual LDAR instead of a quarterly LDAR for those valves. Since the alternate testing strategy applies only to valves in light liquid service and in gas service, it should be explicitly stated in Section 215.435 that the owner or operator of SOCMI plant need only report the total number of valves in light liquid and in gas service that he inspected. This will prevent the intentional or inadvertent inclusion of heavy liquid service valves in the quarterly reports which may, in turn, distort or skew the number count and percentage of leaking valves that are used to determine a good level of performance.

The Joint Proponents propose to amend Appendix D by correcting the typographical errors in the list and by replacing the USEPA OCPDB number assigned to each of the SOCMI chemicals in the list with the CAS number assigned to the same chemical. OCPDB numbers are reference indexes assigned to the various chemicals in the USEPA's Organic Chemical Producers Data Base (OCPDB). CAS numbers are chemical registry numbers developed by the Chemical Abstract Service (CAS) Division of the American Chemical Society (ACS). The present Appendix D, which contains the list of chemicals and polymers produced by the affected plants, was published in the draft CTG. It contains numerous typographical errors that were contained in the draft CTG list. Some of the chemicals such as OCPDB No. 710, 1,3-butylene glycol were inadvertently omitted form the list. These typographical errors therefore should be corrected. Although the final CTG stated that RACT should be applied to "equipment in process units operated to produce one or more of the synthetic organic chemicals listed in Appendix E of the proposed standards of performance for SOCMI (46 Fed. Reg. 1136, January 5, 1981), methyl tert-butyl ether (MTBE), polyethylene, polypropylene, and polystryene", the Agency proposes to use the SOCMI list in Section 60.489 in the final NSPS which contains the same chemicals, but which uses the CAS numbers in place of OCPDB numbers. The reasons for the Agency's preference of using the CAS numbers rather than the OCPDB numbers are as follows: (1) the CAS registry number system is a universally known system and is acceptable and accessible to chemistry professionals in the academic and industrial fields in the United States and in the world, (2) the USEPA OCPDB number system is known and accessible only to a few people at the USEPA, and (3) the CAS registry

system is a unique, structure-based listing of organic compounds that contains all the significant chemical research information reported in the international literature since 1907. In comparison, the OCPDB system appears to have a very short history and, therefore, may be inferior.

The Board finds the proposed amendments to be technically feasible and economically reasonable.

ORDER

The Board hereby proposes for Second Notice the following rule to be filed with the Joint Committee on Administrative Rules.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: AIR POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER C: EMISSION STANDARDS AND LIMITATIONS FOR STATIONARY SOURCES

PART 211
DEFINITIONS AND GENERAL PROVISIONS

SUBPART B: DEFINITIONS

Section
211.121 Other Definitions
211.122 Definitions

Section 211.122 Definitions

"Closed Purge System": A system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow inducing devices that transport liquid or vapor from a piece or pieces of equipment to a control device, or return the liquid or vapor to the process line.

"Closed Vent System": A system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device, or return the gas or vapor to the process line.

"Component": Any piece of equipment which has the potential to leak volatile organic material including, but not limited to, pump seals, compressor seals, seal oil degassing vents, pipeline valves, pressure relief

devices, process drains and open ended ~~pipes~~valves. This definition excludes valves which are not externally regulated, flanges, and equipment in heavy liquid service. For purposes of Subpart Q (35 Ill. Adm. Code 215), this definition also excludes bleed ports of gear pumps in polymer service.

"Control Device": For purposes of Subpart Q, an enclosed combustion device, vapor recovery system, flare, or closed container.

"In-situ Sampling Systems": Nonextractive samplers or in-line samplers.

"Light Liquid": Volatile organic material in the liquid state which is not defined as a heavy liquid.

"Liquids Dripping": Any visible leaking from a seal including spraying, misting, clouding and ice formation.

"Pressure Release": The emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

"Process Unit": Components assembled to produce, as intermediate or final products, one or more of the chemicals listed in Appendix D. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

"Process Unit Shutdown": A work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare components and technically feasible bypassing of components without stopping production are not process unit shutdowns.

"Purged Process Fluid": Liquid or vapor from a process unit that contains volatile organic material and that results from flushing or cleaning the sample line(s) of a process unit so that a uncontaminated sample may then be taken for testing or analysis.

"Sensor": A device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

"Synthetic Organic Chemical or Polymer Manufacturing Plant": A plant that produces, as intermediates or final products, one or more of the chemicals or polymers listed in Appendix D.

"Zero Volatile Organic Material Emissions": A discharge of volatile organic material into the atmosphere as indicated by an instrument reading of less than 500 ppm above background as determined in accordance with 40 CFR 60.485(c).

(Source: Amended at _____ Ill. Reg. _____, effective _____)

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: AIR POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER C: EMISSIONS STANDARDS AND LIMITATIONS FOR STATIONARY SOURCES

PART 215
ORGANIC MATERIAL EMISSION STANDARDS AND LIMITATIONS

SUBPART A: GENERAL PROVISIONS

Section
215.100 Introduction
215.101 Clean-up and Disposal Operations
215.102 Testing Methods
215.103 Abbreviations and Conversion Factors
215.104 Definitions
215.105 Incorporations by Reference
215.106 Afterburners
215.107 Determination of Applicability

SUBPART Q: LEAKS FROM SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING EQUIPMENT

Section
215.420 Applicability
215.421 General Requirements
215.422 Inspection Program Plan for Leaks
215.423 Inspection Program for Leaks
215.424 Repairing Leaks
215.425 Recordkeeping for Leaks
215.426 Reporting for Leaks
215.427 Alternative Program for Leaks
215.428 Compliance Dates
215.429 Compliance Plan
215.430 General Requirements
215.431 Inspection Program Plan for Leaks
215.432 Inspection Program for Leaks

215.433 Repairing Leaks
215.434 Recordkeeping for Leaks
215.435 Report for Leaks
215.436 Alternative Program for Leaks
215.437 Open-Ended Valves
215.438 Standards for Control Devices
215.4389 Compliance Plan

Appendix D List of Chemicals Defining Synthetic Organic Chemical and Polymer Manufacturing

SUBPART A: GENERAL PROVISIONS

Section 215.104 Definitions

The definitions of 35 Ill. Adm. Code 201 and 211 apply to this Part, as well as the definition contained in this Section. Where the definition contained in this Section is more specific than that found in 35 Ill. Adm. Code 201 or 211, it shall take precedence in application of this Part.

~~"Light liquid": Volatile organic material in the liquid state which is not defined as heavy liquid.~~

(SOURCE: Amended at ___ Ill. Reg. ___, effective _____)

Section 215.105 Incorporation by Reference

The following materials are incorporated by reference:

a) American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103:

1) ASTM D 1644-59 Method A

2) ASTM D 1475-60

3) ASTM D 2369-73

4) ASTM D 2879-83 (Approved 1983)

5) ASTM D 323-82 (Approved 1982)

6) ASTM D 86-82 (Approved 1982)

7) ASTM E 260-73 (Approved 1973), E 168-67 (Reapproved 1977), E 169-63 (Reapproved 1981), E 20 (Approved 1985)

8) ASTM D 97-66

9) ASTM D 1946-67

10) ASTM D 2382-76

11) ASTM D 2504-83

12) ASTM D 2382-83

b) Federal Standard 141a, Method 4082.1

c) National Fire Codes, National Fire Prevention Association, Battery March Park, Quincy, Massachusetts 02269 (1979)

d) United States Environmental Protection Agency, Washington, D.C., EPA-450/2-77-026, Appendix A~~.~~ (October 1977).

e) United States Environmental Protection Agency, Washington, D.C., EPA-450/2-78-051 Appendix A and Appendix B (December 1978).

f) Standard Industrial Classification Manual, published by Executive Office of the President, Office of Management and Budget, Washington, D.C., 1972

g) 40 CFR 60, Appendix A~~.~~ (1986)

h) United States Environmental Protection Agency, Washington D.C., EPA-450/2-78-041.

BOARD NOTE: The incorporations by reference listed above contain no later amendments or editions.

(Source: Amended at _____ Ill. Reg. _____, effective _____)

SUBPART Q: LEAKS FROM SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING EQUIPMENT

Section 215.420 Applicability

The provisions of Sections 215.421 through 215.429 of this subpart shall apply to all plants in the State of Illinois which manufacture synthetic organic chemicals and polymers, except those located in any of the following counties: Will, McHenry, Cook, DuPage, Lake, Kane, Madison, St. Clair, Macoupin, and Monroe. The provisions of Section 215.430 through ~~215.438~~ 215.329 shall apply to the counties specifically enumerated above. In addition, if any county is redesignated as non-attainment by the USEPA subsequent to December 31, 1987, the

owner or operator of a plant located in that county shall comply with the requirements of Sections 215.430 through ~~215.438~~ 215.439 upon the effective date of the redesignation.

(Source: Amended at _____ Ill. Reg. _____, effective _____)

Section 215.430 General Requirements

The owner or operator of a plant which processes more than 3660 Mg/yr (4033 tons/year) gaseous ~~or~~ and light liquid volatile organic material, and whose components are used to manufacture the synthetic organic chemicals or polymers listed in Appendix D, shall ~~conduct leak inspection and repair programs for that equipment in accordance with this Subpart~~ comply with Sections 215.430 to 215.439. ~~Leak inspection and repair programs shall be conducted for that equipment~~ The provisions of Sections 215.430 to 215.439 are applicable to components containing 10 percent or more by weight volatile organic material as determined by ASTM method E-168, E-169 and E-260, incorporated by reference in Section 215.105. Those components that are not process unit components are exempt from Sections 215.430 to 215.439. A component shall be considered to be leaking if the volatile organic material is equal to, or is greater than 10,000 ppmv as methane or hexane as determined by USEPA Reference Method 21, as specified at 40 CFR 60, Appendix A, incorporated by reference in Section 215.105, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed. The provisions of this Subpart are not applicable if the equipment components are used to produce heavy liquid chemicals only from heavy liquid feed or raw materials.

(Source: Amended at _____ Ill. Reg. _____, effective _____)

Section 215.432 Inspection Program for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 215.430 through ~~215.438~~, 215.439, shall for the purposes of detecting leaks, conduct a component inspection program utilizing the test methods specified in USEPA Reference Method 21, 40 CFR 60, Appendix A (1986), incorporated by reference in Section 215.105, consistent with the following provisions:

a) Test annually those components operated near extreme temperature or pressure such that they would be unsafe to routinely monitor, and those components located more than two meters above permanent worker access structures or surfaces;

b) Test quarterly all other pressure relief valves in gas service, pumps in light liquid service, valves in light liquid service and in gas service, and compressors.

c) If less than or equal to 2 percent of the valves in light liquid service and in gas service tested pursuant to subsection (b) are found not to leak for 5 consecutive quarters, no leak tests shall be required for three consecutive quarters. Thereafter, leak tests shall resume for the next quarter. If that test shows less than or equal to 2 percent of the valves in light liquid service and in gas service are leaking, then no tests are required for the next 3 quarters. If more than 2 percent are leaking, then tests are required for the next 5 quarters.

d) Observe visually all pump seals weekly.

e) Test immediately any pump seal in light liquid service from which liquids are observed dripping.

f) Test any relief valve within 24 hours after it has vented to the atmosphere.

g) Routine instrument monitoring of valves which are not externally regulated, flanges, and ~~equipment~~ components in heavy liquid service, is not required. However, any valve which is not externally regulated, flange, or ~~piece of equipment~~ component in heavy liquid service that is found to be leaking on the basis of sight, smell or sound shall be repaired as soon as practicable but no later than 30 days after the leak is found.

h) Test immediately after repair any component that was found leaking.

i) Within 1 hour of its detection, a weatherproof, readily visible tag, in bright colors such as red or yellow, bearing an identification number and the date on which the leak was detected must be affixed on the leaking component and remain in place until the leaking component is repaired.

j) Any component that is in vacuum service~~,~~ or any pressure relief devices connected to an operating flare header or to a vapor recovery devices ~~are~~ is exempt from the monitoring requirements in this Section.

(Source: Amended at _____ Ill. Reg. _____, effective _____)

Section 215.435 Report for Leaks

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Section 215.430 through ~~215.438~~ 215.439 shall:

a) Submit quarterly reports to the Agency on or before March 31, June 30, September 30, and December 31 of each year, listing all leaking components identified pursuant to Section 215.432 but not repaired within 15 days, all leaking components awaiting process unit shutdown, the total number of components inspected, the type of components inspected, and the total number of components found leaking, the total number of valves in light liquid and in gas service inspected and the number and percentage of valves found leaking.

b) Submit a signed statement with the report attesting that all monitoring and repairs were preformed as required under Section 215.430 through 215.436.

(Source: Amended at _____ Ill. Reg. _____, effective _____)

Section 215.437 Open-Ended Valves

a) Each open-ended valve shall be equipped with a cap, blind flange, plug, or a second valve, except during operations requiring fluid flow through the open-ended valve.

b) Each open-ended valve equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

c) Components which are ~~O~~open-ended valves and which serve as a sampling connection shall be ~~equipped with a closed purge system or closed vent system~~ controlled such that:

1) A closed purge system or closed vent system shall return ~~Purged~~ purged process fluid ~~shall be returned~~ to the process line with zero ~~VOM~~ volatile organic material emissions to the atmosphere, or

2) A closed purge system or closed vent system shall collect and recycle ~~Purged~~ purged process fluid ~~shall be collected and recycled~~ to the process line with zero volatile organic material emissions to the atmosphere, or

3) Purged process fluid shall be transported to a control device that complies with the requirements of Section 215.438.

d) In-situ sampling systems are exempt from subsection (c).

(Source: Amended at _____ Ill. Reg. _____, effective _____)

Section 215.438 Standards for Control Devices

Control devices used to comply with Section 215.437(c) shall comply with following:

a) If the control device is a vapor recovery system (for example, condensers and adsorbers), it shall be designed and operated to recover the volatile organic material emissions vented to it with an efficiency of 95 percent or greater.

b) If the control device is an enclosed combustion device, it shall be designed and operated to reduce the volatile organic material emissions vented to it with an efficiency of 95 percent or greater, or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816°C.

c) If the control device is a flare, it shall:

1) Be designed for and operated with no visible emissions as determined by USEPA Reference Method 22, 40 CFR 60, Appendix A (1986), incorporated by reference in Section 215.105, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

2) Be operated with a pilot flame present at all times and shall be monitored with a thermocouple or any other equivalent device to detect the presence of the pilot flame.

3) Be steam-assisted, air assisted, or nonassisted.

4) Be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be calculated using the following equation:

$$H_T = K\left(\frac{\sum_{i=1}^{n} C_i H_i}{}\right)$$

Where:

H_r = Net heating value of the sample, MJ/scm: where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volumn corresponding to one mole is 20°C.

K = Constant, $1.740 \times 10^{7} \left(\frac{1}{ppm}\right)\left(\frac{g\ mole}{scm}\right)\left(\frac{MJ}{kcal}\right)$

where

standard temperature for g mole is 20 C.
scm

C_i = Concentration of sample component i, in ppm, as measured by USEPA Reference Method 18, 40 CFR 60, Appendix A (1986), and ASTM D 2504-83, both incorporated by reference in Section 215.105.

H_i = Net heat of combustion of sample component i, kcal/g mole. The heats of combustion may be determined using ASTM D 2382-83, incorporated by reference in Section 215.105, if published values are not available or cannot be calculated.

5) Steam-assisted and nonassisted flares shall be designed and operated with an exit velocity, as determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by USEPA Reference Method 2 or 2A, 40 CFR 60, Appendix A (1986) incorporated by reference in Section 215.105, as appropriate; by the unobstructed (free) cross sectional area of the flare tip, less than 18 m/sec (60 ft/sec.).

6) Air-assisted flares shall be designed and operated with an exit velocity less than the maximum permitted velocity, V_{max}, as determined by the following equation:

$$V_{max} = 8.706 + 0.7084(H_r)$$

V_{max}= Maximum permitted velocity, m/sec.

8.706 = Constant.
0.7084 = Constant.
H_r = The net heating value as determined in subsection (c)(4) of this section.

d) If the control device is a closed container, it shall be designed and operated to reduce the volatile organic material emissions, vented from purged process fluid after transfer, to zero volatile organic material emissions as determined by USEPA Reference Method 21 as specified at 40 CFR 60, Appendix A (1986), incorporated by reference in Section 215.105. For purposes of this Section, the phrase "after transfer" shall refer to the time at which the entire amount of purged process fluid resulting from a flushing or cleaning of the sample line enters the closed container or containers including the final container(s) prior to disposal.

e) The owner or operator of a control device shall monitor the control device to ensure that it is operated and maintained in conformance with its design.

f) The control device shall be operated at all times when emissions may be vented to it.

(Source: Former Section 215.438 renumbered to Section 215.439, new Section 215.438 adopted at _____ Ill. Reg. _____, effective _____)

Section ~~215.438~~215.439 Compliance Date

The owner or operator of a synthetic organic chemical or polymer manufacturing plant subject to Sections 215.430 through ~~215.438~~ 215.439 shall comply with the standards and limitations of those Sections no later than December 31, 1987.

(Source: Section 215.439 renumbered from Section 215.438 and amended at _____ Ill. Reg. _____, effective _____)

Appendix D: List of Chemicals Defining Synthetic organic Chemical and Polymer manufacturing

~~OCPDB No.*~~	CAS No. a	Chemical
~~20~~	105-57-7	Acetal
~~30~~	75-07-0	Acetaldehyde
~~40~~	107-89-1	Acetaldol

~~50~~	60-35-5	Acetamide
~~65~~	103-84-4	Acetanilide
~~70~~	64-19-7	Acetic acid
~~80~~	108-24-7	Acetic anhydride
~~90~~	67-64-1	Acetone
~~100~~	75-86-5	Acetone cyanohydrin
~~110~~	75-05-8	Acetonitrile
~~120~~	98-86-2	Acetophenone
~~125~~	75-36-5	Acetyl chloride
~~130~~	74-86-2	Acetylene
~~140~~	107-02-8	Acrolein
~~150~~	79-06-1	Acrylamide
~~160~~	79-10-7	Acrylic acid ~~& esters~~
~~170~~	107-13-1	Acrylonitrile
~~180~~	124-04-9	Adipic acid
~~185~~	111-69-3	Adiponitrile
~~190~~	(b)	Alkyl naphthalenes
~~200~~	107-18-6	Allyl alcohol
~~210~~	107-05-1	Allyl chloride
~~220~~	1321-11-5	Aminobenzoic acid
~~230~~	111-41-1	Aminoethylethanolamine
~~235~~	123-30-8	p-aminophenol
~~240~~	628-63-7, 123-92-2	Amyl acetates
~~250~~	71-41-0c	Amyl alcohols
~~260~~	110-58-7	Amyl amine
~~270~~	543-59-9	Amyl chloride
~~280~~	110-68-7c	Amyl mercaptans
~~290~~	1322-06-1	Amyl phenol
~~300~~	62-53-3	Aniline
~~310~~	142-04-1	Aniline hydrochloride
~~320~~	29191-52-4	Anisidine
~~330~~	100-66-3	Anisole
~~340~~	118-92-3	Anthranilic acid
~~350~~	84-65-1	Anthraquinone
~~360~~	100-52-7	Benzaldehyde
~~370~~	55-21-0	Benzamide
~~380~~	71-43-2	Benzene
~~390~~	98-48-6	Benzenedisulfonic acid
~~400~~	98-11-3	~~Benzene sulfonic~~ Benzenesulfonic acid
~~410~~	134-81-6	Benzil
~~420~~	76-93-7	Benzilic acid
~~430~~	65-85-0	Benzoic acid
~~440~~	119-53-9	Benzoin
~~450~~	100-47-0	Bennzonitrile
~~460~~	119-61-9	Benzophenone
~~480~~	98-07-7	Benzotrichloride
~~490~~	98-88-4	Benzoyl chloride
~~500~~	100-51-6	Benzyl alcohol
~~510~~	100-46-9	~~Benzyl amine~~ Benzylamine
~~520~~	120-51-4	Benzyl benzoate

~~530~~	100-44-7	Benzyl chloride
~~540~~	98-87-3	Benzyl dichloride
~~550~~	92-52-4	Biphenyl
~~560~~	80-05-7	Bisphenol A
~~570~~	10-86-1	Bromobenzene
~~580~~	27497-51-4	Bromonaphthalene
~~590~~	106-99-0	Butadiene
~~592~~	106-98-9	1-butene
~~600~~	123-86-4	n-butyl acetate
~~630~~	141-32-2	n-butyl acrylate
~~640~~	71-36-3	n-butyl alcohol
~~650~~	78-92-2	s-butyl alcohol
~~660~~	75-65-0	t-butyl alcohol
~~670~~	109-73-9	n-butylamine
~~680~~	13952-84-6	s-butylamine
~~690~~	75-64-9	t-butylamine
~~700~~	98-73-7	p-~~pert~~ tert-butyl benzoic acid
	107-88-0	1,3-butylene glycol
~~750~~	123-72-8	n-butyraldehyde
~~760~~	107-92-6	Butyric acid
~~770~~	106-31-0	Butyric anhydride
~~780~~	109-74-0	Butyronitrile
~~785~~	105-60-2	Caprolactam
~~790~~	75-1-50	Carbon disulfide
~~800~~	558-13-4	Carbon tetrabromide
~~810~~	55-23-5	Carbon tetrachloride
~~820~~	9004-35-7	Cellulose acetate
~~840~~	79-11-8	Chloroacetic acid
~~850~~	108-42-9	m-chloroaniline
~~860~~	95-51-2	o-chloroaniline
~~870~~	106-47-8	p-chloroaniline
~~880~~	35913-09-8	Chlorobenzaldehyde
~~890~~	108-90-7	Chlorobenzene
~~900~~	118-91-2, 535-80-8, 74-11-3c	Chlorobenzoic acid
~~905~~	2136-81-4 2136-89-2, 5216-25-1c	Chlorobenzotrichloride
~~910~~	1321-03-5	Chlorobenzoyl chloride
~~920~~	75-45-6	Chlorodifluoroethane
~~921~~	25497-29-4	Chlorodifluoromethane
~~930~~	67-66-3	Chloroform
~~940~~	25586-43-0	Chloronaphthalene
~~950~~	88-73-3	o-chloronitrobenzene
~~951~~	100-00-5	p-chloronitrobenzene
~~960~~	25167-80-0	Chlorophenols
~~964~~	126-99-8	Chloroprene
~~965~~	7790-94-5	Chlorosulfonic acid
~~970~~	108-41-8	m-chlorotoluene
~~980~~	95-49-8	o-chlorotoluene
~~990~~	106-43-4	p-chlorotoluene

~~992~~	75-72-9	Chlorotrifluoromethane
~~1000~~	108-39-4	m-cresol
~~1010~~	95-48-7	o-cresol
~~1020~~	106-44-5	p-cresol
~~1021~~	1319-77-3	Mixed cresols
~~1030~~	1319-77-3	Cresylic acid
~~1040~~	4170-30-0	Crotonaldehyde
~~1050~~	3724-65-0	Crontonic acid
~~1060~~	98-82-8	Cumene
~~1070~~	80-15-9	Cumene hydroperoxide
~~1080~~	372-09-8	Cyanoacetic acid
~~1090~~	506-77-4	Cyanogen chloride
~~1100~~	108-80-5	Cyanuric acid
~~1110~~	108-77-0	Cyanuric chloride
~~1120~~	110-82-7	Cyclohexane
~~1130~~	108-93-0	Cyclohexanol
~~1140~~	108-94-1	Cyclohexanone
~~1150~~	110-83-8	Cyclohexene
~~1160~~	108-91-8	Cyclohexylamine
~~1170~~	111-78-4	Cyclooctadiene
~~1180~~	112-30-1	Decanol
~~1190~~	123-42-2	Diacetone alcohol
~~1200~~	27576-04-1	Diaminobenzoic acid
~~1210~~	95-76-1, 95-82-9, 554-00-7, 608-27-5, 608-31-1, 626-43-7, 27134-27-6, 57311-92-9c	Dichloroaniline
~~1215~~	541-73-1	m-dichlorobenzene
~~1216~~	95-50-1	o-dichlorobenzene
~~1220~~	106-46-7	p-dichlorobenzene
~~1221~~	75-71-8	Dichlorodifluoromethane
~~1240~~	114-44-4	Dichloroethyl ether
	107-06-2	1,2-dichloroethane (EDC)
~~1250~~	96-23-1	Dichlorohydrin
~~1270~~	26952-23-8	Dichloropropene
~~1280~~	101-83-7	Dicyclohexylamine
~~1290~~	109-89-7	Diethylamine
~~1300~~	111-46-6	Diethylene glycol
~~1304~~	112-36-7	Diethylene glycol diethyl ether
~~1305~~	111-96-6	Diethylene glycol dimethyl ether
~~1310~~	112-34-5	Diethylene ~~glycolmonobutyl~~ glycol monobutyl ether
~~1320~~	124-17-7	Diethylene ~~glycolmonobutyl~~ glycol mononbutyl ether acetate
~~1330~~	111-90-0	Diethylene ~~glycolmonoethyl~~ glycol monoethyl ether
~~1340~~	112-15-2	Diethylene ~~glycolmonoethyl~~ glycol monomethyl ether acetate

~~1360~~	111-77-3	Diethylene ~~glycolmonomethyl~~ glycol monomethyl ether
~~1420~~	64-67-5	Diethyl sulfate
~~1430~~	75-37-6	Difluoroethane
~~1440~~	25167-70-8	Diisobutylene
~~1442~~	26761-40-0	Diisodecyl phthalate
~~1444~~	27554-26-3	Diisooctyl phthalate
~~1450~~	674-82-8	Diketene
~~1460~~	124-40-3	Dimethylamine
~~1470~~	121-69-7	N,N-dimethylaniline
~~1480~~	115-10-6	N,N-~~dimethylether~~ dimethyl ether
~~1490~~	68-12-2	N,N-dimethylformamide
~~1495~~	57-14-7	Dimethylhydrazine
~~1500~~	77-78-1	Dimethyl sulfate
~~1510~~	75-18-3	Dimethyl sulfide
~~1520~~	67-68-5	~~Dimethylsulfoxide~~ Dimethyl sulfoxide
~~1530~~	120-61-6	~~Dimethylterephthalate~~ Dimethyl terephthalate
~~1540~~	99-34-3	3,5-dinitrobenzoic acid
~~1545~~	51-28-5	Dinitrophenol
	25321-14-6	Dinitrotoluene
~~1560~~	123-91-1	Dioxane
~~1570~~	646-06-0	Dioxolane
~~1580~~	122-39-4	Diphenylamine
~~1590~~	101-84-4	Diphenyl oxide
~~1600~~	102-08-9	Diphenyl thiourea
~~1610~~	25265-71-8	Dipropylene glycol
~~1620~~	25378-22-7	Dodecene
~~1630~~	28675-17-4	Dodecylaniline
~~1640~~	27193-86-8	Dodecylphenol
~~1650~~	106-89-8	Epichlorohydrin
~~1660~~	64-17-5	Ethanol
~~1661~~	141-43-5c	Ethanolamines
~~1670~~	141-78-6	Ethyl acetate
~~1680~~		~~Ethyl~~
	141-97-9	Ethyl acetoacetate
~~1690~~	140-88-5	Ethyl acrylate
~~1700~~	75-04-7	Ethylamine
~~1710~~	100-41-4	Ethylbenzene
~~1720~~	74-96-4	Ethyl bromide
~~1730~~	9004-57-3	Ethylcellulose
~~1740~~	75-00-3	Ethyl chloride
~~1750~~	105-39-5	Ethyl chloroacetate
~~1760~~	105-56-6	Ethylcyanoacetate
~~1770~~	74-85-1	Ethylene
~~1780~~	96-49-1	Ethylene carbonate
~~1790~~	107-07-3	Ethylene Chlorohydrin
~~1800~~	107-15-3	Ethylenediamine
~~1810~~	106-93-4	Ethylene dibromide
~~1830~~	107-21-1	Ethylene glycol
~~1840~~	111-55-7	Ethylene glycol diacetate
~~1870~~	110-71-4	Ethylene glycol dimethyl ether

~~1890~~	111-76-2	Ethylene glycol monobutyl ether
~~1900~~	112-07-2	Ethylene glycol monobutyl ether acetate
~~1910~~	110-80-5	Ethylene glycol monoethyl ether
~~1920~~	111-15-9	Ethylene glycolmonoethyl ether acetate
~~1930~~	109-86-4	Ethylene glycolmonoethyl ether
~~1940~~	110-49-6	Ethylene glycolmonomethyl ether acetate
~~1960~~	122-99-6	Ethylene glycol monophenyl ether
~~1970~~	2807-30-9	Ethylene glycolmonopropyl ether
~~1980~~	75-21-8	Ethylene oxide
~~1990~~	60-29-7	Ethyl ether
~~2000~~	104-76-7	2-ethylhexanol
~~2010~~	122-51-0	Ethyl orthoformate
~~2020~~	95-92-1	Ethyl oxalate
~~2030~~	41892-71-1	Ethyl sodium oxaloacetate
~~2040~~	50-00-0	Formaldehyde
~~2050~~	75-12-7	Formamide
~~2060~~	64-18-6	Formic acid
~~2070~~	110-17-8	Fumaric acid
~~2073~~	98-01-1	Furfural
~~2090~~	56-81-5	Glycerol (Synthetic)
~~2091~~	26545-73-7	Glycerol dichlorohydrin
~~2100~~	25791-96-2	Glycerol triether
~~2110~~	56-40-6	Glycine
~~2120~~	107-22-2	Glyoxal
~~2145~~	118-74-1	Hexachlorobenzene
~~2150~~	67-72-1	Hexachloroethane
~~2160~~	36653-82-4	Hexadecyl alcohol
~~2165~~	124-09-4	Hexamethylenediamine
~~2170~~	629-11-8	Hexamethylene glycol
~~2180~~	100-97-0	Hexamethylenetetramine
~~2190~~	74-90-8	Hydrogen cyanide
~~2200~~	123-31-9	Hydroquinone
~~2210~~	99-96-7	~~p-hydroxy-benzoic~~ p-hydroxybenzoic acid
~~2240~~	26760-64-5	Isoamylene
~~2250~~	78-83-1	Isobutanol
~~2260~~	110-19-0	Isobutyl acetate
~~2261~~	115-11-7	Isobutylene
~~2270~~	78-84-2	Isobutyraldehyde
~~2280~~	79-31-2	Isobutyric acid
~~2300~~	25339-17-7	Isodecanol
~~2320~~	26952-21-6	Isooctyl alcohol
~~2321~~	78-78-4	Isopentane
~~2330~~	78-59-1	Isophorone
~~2340~~	121-91-5	Isophthalic acid
~~2350~~	78-79-5	Isoprene
~~2360~~	67-63-0	Isopropanol
~~2370~~		~~Isopropyl~~

	108-21-4	Isopropyl acetate
~~2380~~	75-31-0	Isopropylamine
~~2390~~	75-29-6	Isopropyl chloride
~~2400~~	25168-06-3	Isopropylphenol
~~2410~~	463-51-4	Ketene
~~2414~~	(b)	Linear ~~alkylsulfonate~~ alkyl sulfonate
~~2417~~	123-01-3	Linear alkylbenzene (Linear dodecylbenzene)
~~2420~~	110-16-7	Maleic acid
~~2430~~	108-31-6	Maleic anhydride
~~2440~~	6915-15-7	Malic acid
~~2450~~	141-79-7	Mesityl oxide
~~2460~~	121-47-1	Metanilic acid
~~2240~~	79-41-4	Methacrylic acid
~~2490~~	563-47-3	Methallyl chloride
~~2500~~	67-56-1	Methanol
~~2510~~	79-20-9	Methyl acetate
~~2520~~	105-45-3	Methyl acetoacetate
~~2530~~	74-89-5	Methylamine
~~2540~~	100-61-8	n-methylaniline
~~2545~~	74-83-9	Methyl bromide
~~2550~~	37365-71-2	Methyl butynol
~~2560~~	74-87-3	Methyl chloride
~~2570~~	108-87-2	Methyl cyclohexane
~~2590~~	1331-22-2	Methyl cyclohexanone
~~2620~~	75-09-2	Methylene chloride
~~2630~~	101-77-9	Methylene dianiline
~~2635~~	101-68-8	Methylene diphenyl diisocyanate
~~2640~~	78-93-3	Methyl ethyl ketone
~~2644~~	107-31-3	Methyl formate
~~2650~~	108-11-2	Methyl isobutyl carbinol
~~2660~~	108-10-1	Methyl isobutyl ketone
~~2665~~	80-62-6	Methyl methacrylate
~~2670~~	77-75-8	~~Methyl pentynol~~ Methylpentynol
~~2690~~	98-83-9	a-methyistyrene
~~2700~~	110-91-8	Morpholine
~~2710~~	85-47-2	a-naphthalene sulfonic acid
~~2720~~	120-18-3	B-naphthalene sulfonic acid
~~2730~~	90-15-3	a-naphthol
~~2740~~	135-19-3	B-naphthol
~~2750~~	75-98-9	Neopentanoic acid
~~2756~~	88-74-4	o-nitroaniline
~~2757~~	100-01-6	p-nitroaniline
~~2760~~	91-23-6	o-nitroanisole
~~2762~~	100-17-4	p-nitroanisole
~~2770~~	98-95-3	Nitrobenzene
~~2780~~	27178-83-2c	Nitrobenzoic acid (o, m & p)
~~2790~~	79-24-3	Nitroethane
~~2791~~	75-52-5	Nitromethane
~~2792~~		~~Nitrophenol~~
	88-75-5	2-Nitrophenol

~~2795~~	25322-01-4	Nitropropane
~~2800~~	1321-12-6	Nitrotoluene
~~2810~~	27215-95-8	Nonene
~~2820~~	25154-52-3	~~Nonyl phenol~~ Nonylphenol
~~2830~~	27193-28-8	~~Octyl phenol~~ Octylphenol
~~2840~~	123-63-7	Paraldehyde
~~2850~~	115-77-5	Pentaerythritol
~~2851~~	109-66-0	n-pentane
~~2855~~	109-67-1	1-pentene
~~2860~~	127-18-4	Perchloroethylene
~~2882~~	594-42-3	~~Perchloromethylmercaptan~~ Perchloromethyl mercaptan
~~2890~~	94-70-2	o-phenetidine
~~2900~~	156-43-4	p-phenetidine
~~2910~~	108-95-2	Phenol
~~2920~~	98-67-9, 585-38-6, 609-46-1, 133-39-7c	Phenolsulfonic acids
~~2930~~	91-40-7	Phenyl anthranilic acid
~~2940~~	(b)	Phenylenediamine
	75-44-5	Phosgene
~~2960~~	85-44-9	Phthalic anhydride
~~2970~~	85-41-6	Phthalimide
~~2973~~	108-99-6	~~sb~~-picoline
~~2976~~	110-85-0	Piperazine
~~3000~~	9003-29-6, 25036-29-7c	Polybutenes
~~3010~~	25322-68-3	Polyethylene glycol
~~3025~~	25322-69-4	Polypropylene glycol
~~3063~~	123-38-6	~~Propionaldehyde~~ Propional dehyde
~~3066~~	79-09-4	Propionic acid
~~3070~~	71-23-8	n-propyl alcohol
~~3075~~	107-10-8	Propylamine
~~3080~~	540-54-5	Propyl chloride
~~3090~~	115-07-1	Propylene
~~3100~~	127-00-4	Propylene chlorohydrin
~~3110~~	78-87-5	Propylene dichloride
~~3111~~	57-55-6	Propylene glycol
~~3120~~	75-56-9	Propylene oxide
~~3130~~	110-86-1	Pyridine
~~3140~~	106-51-4	Quinone
~~3150~~	108-46-3	Resorcinol
~~3160~~	27138-57-4	Resorcylic acid
~~3170~~	69-72-7	Salicylic acid
~~3180~~	127-09-3	Sodium acetate
~~3181~~	532-32-1	Sodium benzoate
~~3190~~	9004-32-4	Sodium ~~carboxymethylcellulose~~ carboxymethyl cellulose
~~3191~~	3926-62-3	Sodium chloroacetate
~~3200~~	141-53-7	Sodium formate
~~3210~~	139-02-6	Sodium phenate

~~3220~~	110-44-1	Sorbic acid
~~3230~~	100-42-5	Styrene
~~3240~~	110-15-6	Succinic acid
~~3250~~	110-61-2	Succinitrile
~~3251~~	121-57-3	Sulfanilic acid
~~3260~~	126-33-0	Sulfolane
~~3270~~	1401-55-4	Tannic acid
~~3280~~	100-21-0	Terephthalic acid
~~3290 & 3291~~	79-34-5c	Tetrachloroethanes
~~3300~~	117-08-8	Tetrachlorophthalic anhydride
~~3310~~	78-00-2	~~Tetraethyllead~~ Tetraethyl lead
~~3320~~	119-64-2	Tetrahydronaphthalene
~~3330~~	85-43-8	Tetrahydrophthalic anhydride
~~3335~~	75-74-1	~~Tetramethyllead~~ Tetramethyl lead
~~3340~~	110-60-1	Tetramethylenediamine
~~3341~~	110-18-9	Tetramethylethylenediamine
~~3349~~	108-88-3	Toluene
~~3350~~	95-80-7	Toluene-2,4-diamine
~~3354~~	584-84-9	Toluene-2,4-diisocyanate
~~3355~~	26471-62-5	Toluene diisocyanates (mixture)
~~3360~~	1333-07-9	Toluene sulfonamide
~~3370~~	104-15-4c	~~Toluene sulfonic~~ Toluenesulfonic acids
~~3380~~	98-59-9	Toluene ~~sulfonylchloride~~ sulfonyl chloride
~~3381, 3390 &~~ ~~3391~~	26915-12-8	Toluidines
~~3393~~	87-61-6, 108-70-3, 120-82-1c	Trichlorobenzenes
~~3395~~	71-55-6	1,1,1-trichloroethane
~~3400~~	79-00-5	1,1,2-trichloroethane
~~3410~~	79-01-6	Trichloroethylene
~~3411~~	75-69-4	Trichlorofluoromethane
~~3420~~	96-18-4	1,2,3-trichloropropane
~~3430~~	76-13-1	1,1,2-trichloro~~1,~~ 1,2,2-trifluoroethane
~~3450~~	121-44-8	Triethylamine
~~3460~~	112-27-6	Triethylene glycol
~~3470~~	112-49-2	Triethylene ~~glycoldimethyl~~ glycol dimethyl ether
~~3480~~	7756-94-7	Triisobutylene
~~3490~~	75-50-3	Trimethylamine
	57-13-6	Urea
~~3510~~	108-05-4	Vinyl acetate
~~3520~~	75-01-4	Vinyl chloride
~~3530~~	75-35-4	Vinylidene chloride
3540	25013-15-4	Vinyl toluene
~~3541~~	1330-20-7	Xylenes (mixed)
~~3560~~	95-47-6	o-xylene
~~3570~~	106-42-3	p-xylene
~~3580~~	1300-71-6	Xylenol

~~3590~~	1300-73-8	Xylidine
	(b)	~~methylterbutyl~~ methyl tert -butyl ether
	9002-88-4	Polyethylene
	(b)	Polypropylene
	9009-53-6	Polystyrene

* ~~The OCPDB numbers are reference indices assigned to the various chemicals in the Organic Chemical Producers Data Base developed by the USEPA.~~

a) CAS numbers refer to the Chemical Abstracts Registery numbers assigned to specific chemicals, isonomers or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

b) No CAS number(s) have been assigned to this chemical, to its isomers, or mixtures containing these chemicals.

c) CAS numbers for some of the isomers are listed: the standards apply to all of the isomers and mixtures, even if CAS numbers have not been assigned.

(Source: Amended at _____ Ill. Reg. _____, effective _____)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 23rd day of February, 1989 by a vote of 7-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board