# ILLINOIS POLLUTION CONTROL BOARD August 13, 2020

IN THE MATTER OF:	)	
DEFINITION OF VOM UPDATE, USEPA	)	R19-15
REGULATIONS (July 1, 2018 through	)	(Identical-in-Substance Rulemaking - Air)
December 31, 2018)	)	,

Adopted Rule. Final Order.

OPINION AND ORDER OF THE BOARD (by B.F. Currie):

During the update period of this docket, on November 28, 2018, the United States Environmental Protection Agency (USEPA) added a single exclusion from the federal definition of "volatile organic compound" (VOC) codified at 40 C.F.R. 51.100(s). Accordingly, Section 9.1(e) of the Illinois Environmental Protection Act (Act) (415 ILCS 5/9.1(e) (2018)) requires the Board to expand the exclusion from ozone regulation "due to negligible photochemical reactivity." 415 ILCS 5/9.1(e) (2018). In addition, Section 9.1(e) also requires the Board to use the identical-in-substance procedure of Section 7.2(b) of the Act (415 ILCS 5/7.2(b) (2018)).

The Board today adopts amendments to Illinois' definition of "volatile organic material" (VOM) (35 Ill. Adm. Code 211.7150) that are identical in substance to the USEPA action. The Board also includes corrections to chemical names in the list of excluded compounds.

The Board proposed amendments for public comment on May 21, 2020. A Notice of Proposed Amendments appeared in the June 5, 2020 issue of the *Illinois Register*, at 44 Ill. Reg. 9305. A Notice of Public Information simultaneously appeared, at 44 Ill. Reg. 10035, noticing a public hearing on the proposal that occurred on July 16, 2020. At the public hearing, the hearing officer extended the public comment period past 45 days, until July 31, 2020.

The May 21, 2020 opinion and order set forth reasons for delay and extended until September 30, 2020 the deadline for final action in this rulemaking. The Notice of Public Information published June 5, 2020 provided notice of the reasons for delay and extended the deadline.

The Board received three public comments on the proposed amendments.

- PC 1 E-mail exchange on the proposal between JCAR staff and Board staff that occurred June 15, 2020 and June 22, 2020.
- PC 2 Agency comments on the proposal dated July 8, 2020.
- PC 3 Agency post-hearing comments dated July 29, 2020.

By PC 1, JCAR requested a correction to the text of the proposed amendments. The Board's responses to all JCAR-suggested corrections are listed in Table 5 of the Identical-in-Substance Rulemaking Addendum (Final) (IIS-RA(F)) supplementing the record for this rulemaking.

By PC 2, the Agency recommends that the Board mirror the chemical names that USEPA uses in 40 C.F.R. § 51.100(s) for excluded compounds. Consideration of the Agency comments appears in discussion of public comments below.

By PC 3, the Agency highlights that the name of an Agency representative who testified at hearing on July 16, 2020 does not appear in the summary listing of attendees on page 2 of the transcript. The Board notes the omission and has requested correction of the summary listing of attendees.

#### **SUMMARY OF PROPOSED AMENDMENTS**

# **Federal Amendment Implemented**

USEPA took one action that affected the federal definition of VOC during the second half of 2018 and requires corresponding amendments to the Illinois definition of VOM.

### November 28, 2018 (83 Fed. Reg. 61127)

USEPA added one hydrofluoroolefin compound to the list of chemical species excluded from the federal definition of VOC. The Board must add this compound to the list of compounds excluded from the definition of VOM in 35 Ill. Adm. Code 211.7150.

### **DISCUSSION**

### Federal Action in This Rulemaking

The Board summarized the federal action during the second half of 2018 above. The USEPA action requires a corresponding amendment to the Illinois regulations in this proceeding. The discussion below considers the Board action.

# Addition of One Hydrofluorooelfin to the List of Compounds Excluded from the Definition of VOM (November 28, 2018)

USEPA added (*Z*)-1,1,1,4,4,4-hexa¬fluorobut-2-ene¹ (also called HFO-1336mzz-Z; Chemical Abstract Service (CAS) No. 692-49-9) to the list of chemical compounds excluded from the federal definition of VOC. Excluded from the definition of VOC, emissions of HFO-1336mzz-Z are excluded from regulatory control as a precursor of tropospheric ozone (smog).

USEPA excluded HFO-1336mzz-Z in response to a 2014 petition from its manufacturer, DuPont Chemicals & Fluoroproducts. Uses for HFE-347pcf2 include use as a foam expansion or blowing agent having a lower global warming potential than other chemicals for which it

<sup>&</sup>lt;sup>1</sup> This is the IUPAC name for the compound. It is also known as *cis*-1,1,1,4,4,4-hexa¬fluorobut-2-ene.

could substitute, as for rigid polyurethane insulating foams. It also has a potential as a refrigerant.

USEPA applied its *Interim Guidance on Control of Volatile Organic Compounds in Ozone State Implementation Plans*, 70 Fed. Reg. 54046 (Sep. 13, 2005) in evaluating the DuPont petition. USEPA gauged the maximum incremental reactivity (MIR) and hydroxide radical reaction rate (K<sub>OH</sub>) in evaluating HFO-1336mzz-Z, using ethane as the benchmark.<sup>2</sup> USEPA concluded that that HFO-1336mzz-Z has an ozone-forming potential equal to or less than that of ethane. 83 Fed. Reg. at 61129-30.

USEPA further observed that HFO-1336mzz-Z is unlikely to participate in stratospheric ozone depletion; USEPA has listed HFO-1336mzz-Z is an acceptable substitute under its Significant New Alternative Policy program; HFO-1336mzz-Z is not a hazardous air pollutant; and the ten-year global warming potential of HFO-1336mzz-Z is lower than those of chemicals for which HFO-1336mzz-Z would substitutes for the same uses. Id. at 61130-31. USEPA also observed that any new use for HFO-1336mzz-Z would need to be reported to USEPA under its Toxic Substances Control Act (TSCA) Significant New Use Rule (SNUR). Id. at 61132; see 40 C.F.R. § 721.18030 (2019) (the SNUR for *Id.* at 61130-31).

The International Union of Pure and Applied Chemistry (IUPAC)-accepted name for HFO-1336mzz-Z is (*Z*)-1,1,1,4,4,4-hexa¬fluorobut-2-ene. USEPA used the similar name, *cis*-1,1,1,4,4,4-hexa¬fluorobut-2-ene. *See PubChem Compound*, "692-49-9," https://www.ncbi.nlm.nih.gov/pccompound/?term=692-49-9. Accessed May 15, 2020.

The Board added HFO-1336mzz-Z to the list of compounds excluded from the definition of VOM in 35 Ill. Adm. Code 211.7150(a) to correspond with the USEPA amendment to 40 C.F.R. § 51.100(s). The Board used IUPAC name as the primary name and omits the name used

<sup>&</sup>lt;sup>2</sup> MIR on a mass basis and K<sub>OH</sub> on a molar basis.

<sup>&</sup>lt;sup>3</sup> At 81 Fed. Reg. 32241, 32243-46 (May 23, 2016).

 $<sup>^4</sup>$  Its GWP is nine. USEPA observed that its  $k_{OH}$ , being twice as high as ethane, means HFO-1336mzz-Z decay before it ascends to the stratosphere to participate in ozone depletion. 83 Fed. Reg. at 61130.

<sup>&</sup>lt;sup>55</sup> See section 5(a) of TSCA (15 U.S.C. § 2604(a) (2018)).

<sup>&</sup>lt;sup>6</sup> The Latin prefix, "cis," meaning "on this side of," signifies that the two trifluoromethyl groups are on the same side at the ends of a double bond. "Cis." *Merriam-Webster.com Dictionary*, Merriam-Webster, https://www.merriam-webster.com/dictionary/cis. Accessed May 12, 2020. "(Z)" is for the German "zusammen," meaning "together," signifies the same. "Z." *Illustrated Glossary of Organic Chemistry*, http://www.chem.ucla.edu/~harding/IGOC/Z/z.html. Accessed May 12, 2020. *See E-Z Notation for Geometric Isomerism*. https://www.chemguide.co.uk/basicorg/isomerism/ez.html. Accessed May 12, 2020.

by USEPA. The Board further parenthetically added the alternative designation, HFE-347pcf2, and CAS number to the listing. The Board's addition of alternative identifiers and corrections to the format are listed in Table 1 of the Identical-in-Substance Rulemaking Addendum (Proposed) (IIS-RA(P)), which is part of the record for this proceeding. The IIS-RA(P) is available on the Board's website.

### **Observed Errors in Chemical Names and Identifiers**

In the course of review of the federal text to ascertain amendments, the Board found a number of errors in the text of 40 C.F.R. § 51.100(s)(1). The errors were in chemical names and identifier formats. All of the errors are in space and hyphen use. Table 1 identifies the corrections that USEPA included in this regard that the Board made previously and does not now need to make. Table 3 identifies the errors from the prior version, 40 C.F.R. § 51.100(s)(1) (2018), into the current amendments. The Board identifies the errors to aid USEPA correcting them.

### **PUBLIC COMMENTS**

The Board invited public comment on the proposed amendments. The Board specifically requested comments on two revisions to the added exempt compound and the one correction included in this docket:

- 1. Is there any reason the Board should retain the name "cis-1,1,1,4,4,4-hexa¬fluorobut-2-ene" and not replace it with the IUPAC-preferred name "(Z)-1,1,1,4,4,4-hexa¬fluorobut-2-ene"?
- 2. Is there any reason the Board should add the CAS registry identifier "CAS No. 692-49-9"?
- 3. Is there any reason the Board should not correct "HFC 43-10mee" to "HFC-4310mee" in the entry for 1,1,1,2,3,4,4,5,5,5-decafluoropentane?
- 4. The Board is aware of refrigerant codes as described in ANSI/ASHRAE 34-2019 and earlier versions. Various on-line chemical resources provide codes for non-refrigerant hydrofluorocarbons (HFCs), hydrochlorofluorocarbons (HCFCs), hydrofluoroolefins (HFOs), hydrofluoroethers (HFEs), etc. The Board requests comment on whether there is a more general coding standard that embraces chemicals in these classes that are not refrigerants?

The Agency responded to the first three inquiries by PC 2. The Agency requests that the Board follow the names USEPA uses in 40 C.F.R. § 51.100(s) as closely as possible. The Agency requests that the Board drop CAS numbers and IUPAC names. The Agency wishes to avoid further confusion from USEPA.

The Agency made the same requests in the last definition of VOM update three years ago. There was indication then that USEPA was confused by the IUPAC names used by the Board. The Board declined to reverse use of CAS numbers and IUPAC names then. <u>Definition</u>

of VOM Update, USEPA Regulations (July 1, 2016 through December 31, 2016) R17-11 (Oct. 19, 2017), slip op. at 3; see PC 2 in docket R17-11.

The Board again refers to the discussion of ambiguities resulting from USEPA's use of common chemical names in the preceding 2017 definition of VOM update R17-2:

Chemical identification can be problematic. Some chemical have several commonly used names, some of which may identify several isomers. Identification of a particular chemical can be difficult. To the extent a chemical name can identify multiple compounds or isomers, it is ambiguous.

Two examples of ambiguous chemical names from the list of excluded compounds were chlorodifluoroethane and dichlorofluoroethane. These were the names that USEPA originally used to identify the excluded compounds. See 54 Fed. Reg. 1987, 1988 (Jan. 18, 1989). Each name describes three chemical isomers. USEPA later more specifically named the two chemicals 1,1-dichloro-1-fluoroethane and 1-chloro-1,1-difluoroethane, to each embrace a single isomer. See 40 C.F.R. 51.100(s)(1) (1992).

There are several conventions for identifying chemicals with varying precision. For example, acetone is a common name for an excluded compound that also bears the common name dimethylketone. The International Union of Pure and Applied Chemistry (IUPAC) has developed a system of nomenclature for chemical compounds. Acetone bears the IUPAC name propan-2-one. USEPA lists this compound as "acetone" in 40 C.F.R. 51.100(s)(1) (2016). The Board parenthetically added "dimethyl ketone or propan-2-one" in corresponding 35 Ill. Adm. Code 211.7150.

For the purpose of obtaining greater certainty in chemical identification, chemists have developed various non-name identifiers. The identifier of interest to the Board is the Chemical Abstract Service (CAS) number developed by the American Chemical Society.<sup>2</sup> CAS numbers are in widespread use, and a single CAS number identifies only one chemical isomer.<sup>3</sup>

Returning to the examples of chlorodifluoroethane and dichlorofluoroethane, the IUPAC names of the isomers and their CAS numbers are as follows:

#### Chlorodifluoroethane isomers:

1-chloro-1,1-difluoroethane (CAS no. 75-68-3)—the excluded isomer 1-chloro-1,2-difluoroethane (CAS no. 338-64-7) 1-chloro-2,2-difluoroethane (CAS no. 338-65-8) chlorodifluoroethane mixed isomers (CAS no. 25497-29-4)

#### Dichlorofluoroethane isomers:

1,1-dichloro-1-fluoroethane (CAS no. 1717-00-6)—the excluded isomer 1,1-dichloro-2-fluoroethane (CAS no. 25167-88-8)

1,2-dichlorofluoroethane (CAS no. 430-57-9)

<u>Definition of VOM Update, USEPA Regulations (January 1, 2016 through June 30, 2016)</u>, R17-2 (Jan. 19, 2017), slip op. at 4-5. (footnotes omitted).

The Board's purpose is less to facilitate USEPA review of the Illinois rules than to ensure clarity and enforceability of the rules. The Board is compelled to correct whatever ambiguity or inaccuracy is found in USEPA rules.

# HISTORICAL SUMMARY OF EXCLUSIONS FROM THE DEFINITION OF VOM AND IMPLEMENTATION IN ILLINOIS

The Board maintains a historical summary of the State and federal definitions of VOM. That summary traces the evolution of the federal *Recommended Policy on the Control of Volatile Organic Compounds*; USEPA's codification of the policy as 40 C.F.R. 51.100(s); subsequent amendments of 40 C.F.R. 51.100(s); and the several rulemakings that the Board undertook to accommodate federal amendments. The historical summary is available on the Board's website.

### **ORDER**

The Board directs the Clerk to file these adopted amendments with the Office of the Secretary of State.

IT IS SO ORDERED.

I, Don A. Brown, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above Opinion and order on August 13, 2020, by a vote of 4-0.

Don A. Brown, Clerk

Illinois Pollution Control Board

Don a. Brown

# TITLE 35: ENVIRONMENTAL PROTECTION

# SUBTITLE B: AIR POLLUTION

## CHAPTER I: POLLUTION CONTROL BOARD

# SUBCHAPTER c: EMISSION STANDARDS AND LIMITATIONS FOR STATIONARY SOURCES

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211.122	Definitions (Repealed)
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211.493	Antifouling Sealer/Tie Coat
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211.665	Auxiliary Boiler
211.670	Baked Coatings
211.680	Bakery Oven
211.685	Basecoat/Clearcoat System
211.690	Batch Loading
211.695	Batch Operation
211.696	Batch Process Train
211.710	Bead-Dipping Bedliner
211.715	
211.730	Binders
211.735	Black Coating
211.740	Brakehorsepower (rated-bhp)
211.750	British Thermal Unit
211.770	Brush or Wipe Coating
211.790	Bulk Gasoline Plant
211.810	Bulk Gasoline Terminal
211.820	Business Machine Plastic Parts
211.825	Camouflage Coating
211.830	Can
211.850	Can Coating
211.870	Can Coating Line
211.880	Cap Sealant
211.890	Capture
211.910	Capture Device
211.930	Capture Efficiency
211.950	Capture System
211.953	Carbon Adsorber
211.954	Cavity Wax
211.955	Cement
211.960	Cement Kiln
211.965	Ceramic Tile Installation Adhesive
211.970	Certified Investigation
	o di

211.980	Chemical Manufacturing Process Unit
211.990	Choke Loading
211.995	Circulating Fluidized Bed Combustor
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211.1010	Clean Air Act
211.1050	Cleaning and Separating Operation
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211.1128	Closed Molding
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211.1190	Coating
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211.1520	Conventional Air Spray
211.1530	Conventional Soybean Crushing Source
211.1550	Conveyorized Degreasing
211.1560	Cove Base
211.1565	Cove Base Installation Adhesive

211.1570	Crude Oil
211.1590	Crude Oil Gathering
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211.1630	Custody Transfer
211.1650	Cutback Asphalt
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211.1670	Daily-Weighted Average VOM Content
211.1690	Day
211.1700	Deadener
211.1710	Degreaser
211.1710	Delivery Vessel
211.1730	Diesel Engine
211.1745	Digital Printing
211.1743	Dip Coating
	Dip Coating Distillate Fuel Oil
211.1770 211.1780	
	Distillation Unit
211.1790	Drum  Dry Cleaning Operation on Dry Cleaning Engility
211.1810	Dry Cleaning Operation or Dry Cleaning Facility
211.1830	Dump-Pit Area
211.1850	Effective Grate Area
211.1870	Effluent Water Separator
211.1872	Ejection Cartridge Sealant
211.1875	Elastomeric Materials
211.1876	Electric Dissipating Coating
211.1877	Electric-Insulating Varnish
211.1878	Electrical Apparatus Component
211.1880	Electrical Switchgear Compartment Coating
211.1882	Electrodeposition Primer (EDP)
211.1883	Electromagnetic Interference/Radio Frequency Interference (EMI/RFI) Shielding
	Coatings
211.1885	Electronic Component
211.1890	Electrostatic Bell or Disc Spray
211.1900	Electrostatic Prep Coat
211.1910	Electrostatic Spray
211.1920	Emergency or Standby Unit
211.1930	Emission Rate
211.1950	Emission Unit
211.1970	Enamel
211.1990	Enclose
211.2010	End Sealing Compound Coat
211.2030	Enhanced Under-the-Cup Fill
211.2040	Etching Filler
211.2050	Ethanol Blend Gasoline
211.2055	Ethylene Propylenediene Monomer (DPDM) Roof Membrane
211.2070	Excess Air
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211.2090	Excessive Release
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211.2368	Flexible Packaging
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211.2410	Floating Roof
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211.2525	Gas Service
211.2550	Gas/Gas Method
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211.2590	Gasoline Dispensing Operation or Gasoline Dispensing Facility
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211.2615	General Work Surface
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211.2625	Glass Melting Furnace
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211.2690	Grain-Handling and Conditioning Operation
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211.2870	Heavy Liquid
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211.2950	Heavy Off-Highway Vehicle Products Coating Line
211.2955	High Bake Coating
211.2956	High Build Primer Surfacer
211.2958	High Gloss Coating
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211.2965	High Precision Optic
211.2970	High Temperature Aluminum Coating
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211.2990	High Volume Low Pressure (HVLP) Spray
211.3010	Hood
211.3030	Hot Well
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211.3070	Incinerator
211.3070	Indirect Heat Transfer
211.3095	Indoor Floor Covering Installation Adhesive
211.3100	Industrial Boiler
211.3110	Ink
211.3110	In-Line Repair
211.3120	In-Process Tank
211.3150	In-Situ Sampling Systems
211.3170	Interior Body Spray Coat
211.3170	Internal-Floating Roof
211.3190	Internal Transferring Area
211.3210	Janitorial Cleaning
411.3413	Janional Cicannig

211.3230	Lacquers
211.3240	Laminate
211.3250	Large Appliance
211.3270	Large Appliance Coating
211.3290	Large Appliance Coating Line
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211.3305	Letterpress Printing Line
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211.3330	Light-Duty Truck
211.3350	Light Oil
211.3355	Lime Kiln
211.3370	Liquid/Gas Method
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211.3410	Liquid Service
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211.3450	Lithographic Printing Line
211.3470	Load-Out Area
211.3475	Load Shaving Unit
211.3480	Loading Event
211.3483	Long Dry Kiln
211.3485	Long Wet Kiln
211.3487	Low-NOx Burner
211.3490	Low Solvent Coating
211.3500	Lubricating Oil
211.3505	Lubricating Wax/Compound
211.3510	Magnet Wire
211.3530	Magnet Wire Coating
211.3550	Magnet Wire Coating Line
211.3555	Maintenance Cleaning
211.3570	Major Dump Pit
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211.3850	Miscellaneous Metal Parts and Products Coating
211.3870	Miscellaneous Metal Parts or Products Coating Line
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211.3961	Motor Vehicle Adhesive
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211.3966	Motor Vehicle Weatherstrip Adhesive
211.3967	Mouth Waterproofing Sealant
211.3968	Multi-Colored Coating
211.3969	Multi-Component Coating
211.3970	Multiple Package Coating
211.3975	Multipurpose Construction Adhesive
211.3980	Nameplate Capacity
211.3985	Natural Finish Hardwood Plywood Panel
211.3990	New Grain-Drying Operation (Repealed)
211.4010	New Grain-Handling Operation (Repealed)
211.4030	No Detectable Volatile Organic Material Emissions
211.4050	Non-Contact Process Water Cooling Tower
211.4052	Non-Convertible Coating
211.4055	Non-Flexible Coating
211.4065	Non-Heatset
211.4067	NO <sub>x</sub> Trading Program
211.4070	Offset
211.4080	One-Component Coating
211.4090	One Hundred Percent Acid
211.4110	One-Turn Storage Space
211.4130	Opacity
211.4150	Opaque Stains
211.4170	Open Top Vapor Degreasing
211.4190	Open-Ended Valve
211.4210	Operator of a Gasoline Dispensing Operation or Operator of a Gasoline
	Dispensing Facility
211.4220	Optical Coating

211.4230	Organic Compound
211.4250	Organic Material and Organic Materials
211.4260	Organic Solvent
211.4270	Organic Vapor
211.4280	Other Glass
211.4285	Outdoor Floor Covering Installation Adhesive
211.4290	Oven
211.4310	Overall Control
211.4330	Overvarnish
211.4350	Owner of a Gasoline Dispensing Operation or Owner of a Gasoline Dispensing
	Facility
211.4370	Owner or Operator
211.4390	Packaging Rotogravure Printing
211.4410	Packaging Rotogravure Printing Line
211.4430	Pail
211.4450	Paint Manufacturing Source or Paint Manufacturing Plant
211.4455	Pan-Backing Coating
211.4460	Panel
211.4470	Paper Coating
211.4490	Paper Coating Line
211.4510	Particulate Matter
211.4530	Parts Per Million (Volume) or PPM (Vol)
211.4540	Perimeter Bonded Sheet Flooring
211.4550	Person
211.4590	Petroleum
211.4610	Petroleum Liquid
211.4630	Petroleum Refinery
211.4650	Pharmaceutical
211.4670	Pharmaceutical Coating Operation
211.4690	Photochemically Reactive Material
211.4710	Pigmented Coatings
211.4720	Pipeline Natural Gas
211.4730	Plant
211.4735	Plastic
211.4740	Plastic Part
211.4750	Plasticizers
211.4760	Plastic Solvent Welding Adhesive
211.4765	Plastic Solvent Welding Adhesive Primer
211.4768	Pleasure Craft
211.4769	Pleasure Craft Surface Coating
211.4770	PM-10
211.4790	Pneumatic Rubber Tire Manufacture
211.4810	Polybasic Organic Acid Partial Oxidation Manufacturing Process
211.4830	Polyester Resin Material(s)
211.4850	Polyester Resin Products Manufacturing Process
211.4870	Polystyrene Plant

211.4890	Polystyrene Resin
211.4895	Polyvinyl Chloride Plastic (PVC Plastic)
211.4900	Porous Material
211.4910	Portable Grain-Handling Equipment
211.4930	Portland Cement Manufacturing Process Emission Source
211.4950	Portland Cement Process or Portland Cement Manufacturing Plant
211.4960	Potential Electrical Output Capacity
211.4970	Potential to Emit
211.4990	Power Driven Fastener Coating
211.5010	Precoat
211.5012	Prefabricated Architectural Coating
211.5015	Preheater Kiln
211.5020	Preheater/Precalciner Kiln
211.5030	Pressure Release
211.5050	Pressure Tank
211.5060	Pressure/Vacuum Relief Valve
211.5061	Pretreatment Coating
211.5062	Pretreatment Wash Primer
211.5065	Primary Product
211.5070	Prime Coat
211.5075	Primer Sealant
211.5080	Primer Sealer
211.5090	Primer Surfacer Coat
211.5110	Primer Surfacer Operation
211.5130	Primers
211.5140	Printed Interior Panel
211.5150	Printing
211.5170	Printing Line
211.5185	Process Emission Source
211.5190	Process Emission Unit
211.5195	Process Heater
211.5210	Process Unit
211.5230	Process Unit Shutdown
211.5245	Process Vent
211.5250	Process Weight Rate
211.5270	Production Equipment Exhaust System
211.5310	Publication Rotogravure Printing Line
211.5330	Purged Process Fluid
211.5335	Radiation Effect Coating
211.5340	Rated Heat Input Capacity
211.5350	Reactor
211.5370	Reasonably Available Control Technology (RACT)
211.5390	Reclamation System
211.5400	Red Coating
211.5410	Refiner
211.5430	Refinery Fuel Gas

211.5450	Refinery Fuel Gas System
211.5470	Refinery Unit or Refinery Process Unit
211.5480	Reflective Argent Coating
211.5490	Refrigerated Condenser
211.5500	Regulated Air Pollutant
211.5510	Reid Vapor Pressure
211.5520	Reinforced Plastic Composite
211.5530	Repair
211.5535	Repair Cleaning
211.5550	Repair Coat
211.5570	Repaired
211.5580	Repowering
211.5585	Research and Development Operation
211.5590	Residual Fuel Oil
211.5600	Resist Coat
211.5610	Restricted Area
211.5630	Retail Outlet
211.5640	Rich-Burn Engine
211.5650	Ringelmann Chart
211.5670	Roadway
211.5690	Roll Coater
211.5710	Roll Coating
211.5730	Roll Printer
211.5750	Roll Printing
211.5770	Rotogravure Printing
211.5790	Rotogravure Printing Line
211.5800	Rubber
211.5810	Safety Relief Valve
211.5830	Sandblasting
211.5850	Sanding Sealers
211.5860	Scientific Instrument
211.5870	Screening
211.5875	Screen Printing
211.5880	Screen Printing on Paper
211.5885	Screen Reclamation
211.5890	Sealer
211.5910	Semi-Transparent Stains
211.5930	Sensor
211.5950	Set of Safety Relief Valves
211.5970	Sheet Basecoat
211.5980	Sheet-Fed
211.5985	Sheet Rubber Lining Installation
211.5987	Shock-Free Coating
211.5990	Shotblasting
211.6010	Side-Seam Spray Coat
211.6012	Silicone-Release Coating

211.6015	Single-Ply Roof Membrane
211.6017	Single-Ply Roof Membrane Adhesive Primer
211.6020	Single-Ply Roof Membrane Installation and Repair Adhesive
211.6025	Single Unit Operation
211.6030	Smoke
211.6050	Smokeless Flare
211.6060	Soft Coat
211.6063	Solar-Absorbent Coating
211.6065	Solids Turnover Ratio (R <sub>T</sub> )
211.6070	Solvent
211.6090	Solvent Cleaning
211.6110	Solvent Recovery System
211.6130	Source
211.6140	Specialty Coatings
211.6145	Specialty Coatings Specialty Coatings for Motor Vehicles
211.6150	Specialty High Gloss Catalyzed Coating
	1 , 5
211.6170	Specialty Leather
211.6190	Specialty Soybean Crushing Source
211.6210	Splash Loading
211.6230	Stack
211.6250	Stain Coating
211.6270	Standard Conditions
211.6290	Standard Cubic Foot (scf)
211.6310	Start-Up
211.6330	Stationary Emission Source
211.6350	Stationary Emission Unit
211.6355	Stationary Gas Turbine
211.6360	Stationary Reciprocating Internal Combustion Engine
211.6370	Stationary Source
211.6390	Stationary Storage Tank
211.6400	Stencil Coat
211.6405	Sterilization Indicating Ink
211.6410	Storage Tank or Storage Vessel
211.6420	Strippable Spray Booth Coating
211.6425	Stripping
211.6427	Structural Glazing
211.6430	Styrene Devolatilizer Unit
211.6450	Styrene Recovery Unit
211.6460	Subfloor
211.6470	Submerged Loading Pipe
211.6490	Substrate
211.6510	Sulfuric Acid Mist
211.6530	Surface Condenser
211.6535	Surface Preparation
211.6540	Surface Preparation Materials
211.6550	Synthetic Organic Chemical or Polymer Manufacturing Plant
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211.6570	Tablet Coating Operation
211.6580	Texture Coat
211.6585	Thin Metal Laminating Adhesive
211.6587	Thin Particleboard
211.6590	
	Thirty-Day Rolling Average
211.6610	Three-Piece Can
211.6620	Three or Four Stage Coating System
211.6630	Through-the-Valve Fill
211.6635	Tileboard
211.6640	Tire Repair
211.6650	Tooling Resin
211.6670	Topcoat
211.6690	Topcoat Operation
211.6695	Topcoat System
211.6710	Touch-Up
211.6720	Touch-Up Coating
211.6730	Transfer Efficiency
211.6740	Translucent Coating
211.6750	Tread End Cementing
211.6770	True Vapor Pressure
211.6780	Trunk Interior Coating
211.6790	Turnaround
211.6810	Two-Piece Can
211.6825	Underbody Coating
211.6830	Under-the-Cup Fill
211.6850	Undertread Cementing
211.6860	Uniform Finish Blender
211.6870	Unregulated Safety Relief Valve
211.6880	Vacuum Metallizing
211.6885	Vacuum Metalizing Coating
211.6890	Vacuum Producing System
211.6910	Vacuum Service
211.6930	Valves Not Externally Regulated
211.6950	Vapor Balance System
211.6970	Vapor Collection System
211.6990	Vapor Control System
211.7010	Vapor-Mounted Primary Seal
211.7030	Vapor Recovery System
211.7050	Vapor-Suppressed Polyester Resin
211.7070	Vinyl Coating
211.7070	Vinyl Coating Vinyl Coating Line
211.7110 211.7130	Volatile Organic Liquid (VOL) Volatile Organic Material Content (VOMC)
	Volatile Organic Material (VOM) or Volatile Organic Compound (VOC)
211.7150	` , ,
211.7170	Volatile Petroleum Liquid
211.7190	Wash Coat

211.7200	Washoff Operations
211.7210	Wastewater (Oil/Water) Separator
211.7220	Waterproof Resorcinol Glue
211.7230	Weak Nitric Acid Manufacturing Process
211.7240	Weatherstrip Adhesive
211.7250	Web
211.7270	Wholesale Purchase - Consumer
211.7290	Wood Furniture
211.7310	Wood Furniture Coating
211.7330	Wood Furniture Coating Line
211.7350	Woodworking
211.7400	Yeast Percentage

211.APPENDIX A Rule into Section Table 211.APPENDIX B Section into Rule Table

AUTHORITY: Implementing Sections 9, 9.1, 9.9 and 10 and authorized by Sections 27 of the Environmental Protection Act [415 ILCS 5/9, 9.1, 9.9, 10, and 27].

SOURCE: Adopted as Chapter 2: Air Pollution, Rule 201: Definitions, R71-23, 4 PCB 191, filed and effective April 14, 1972; amended in R74-2 and R75-5, 32 PCB 295, at 3 Ill. Reg. 5, p. 777, effective February 3, 1979; amended in R78-3 and 4, 35 PCB 75 and 243, at 3 Ill. Reg. 30, p. 124, effective July 28, 1979; amended in R80-5, at 7 Ill. Reg. 1244, effective January 21, 1983; codified at 7 III. Reg. 13590; amended in R82-1 (Docket A) at 10 III. Reg. 12624, effective July 7, 1986; amended in R85-21(A) at 11 Ill. Reg. 11747, effective June 29, 1987; amended in R86-34 at 11 Ill. Reg. 12267, effective July 10, 1987; amended in R86-39 at 11 Ill. Reg. 20804, effective December 14, 1987; amended in R82-14 and R86-37 at 12 Ill. Reg. 787, effective December 24, 1987; amended in R86-18 at 12 Ill. Reg. 7284, effective April 8, 1988; amended in R86-10 at 12 III. Reg. 7621, effective April 11, 1988; amended in R88-23 at 13 III. Reg. 10862, effective June 27, 1989; amended in R89-8 at 13 Ill. Reg. 17457, effective January 1, 1990; amended in R89-16(A) at 14 Ill. Reg. 9141, effective May 23, 1990; amended in R88-30(B) at 15 Ill. Reg. 5223, effective March 28, 1991; amended in R88-14 at 15 Ill. Reg. 7901, effective May 14, 1991; amended in R91-10 at 15 Ill. Reg. 15564, effective October 11, 1991; amended in R91-6 at 15 Ill. Reg. 15673, effective October 14, 1991; amended in R91-22 at 16 Ill. Reg. 7656, effective May 1, 1992; amended in R91-24 at 16 Ill. Reg. 13526, effective August 24, 1992; amended in R93-9 at 17 Ill. Reg. 16504, effective September 27, 1993; amended in R93-11 at 17 Ill. Reg. 21471, effective December 7, 1993; amended in R93-14 at 18 Ill. Reg. 1253, effective January 18, 1994; amended in R94-12 at 18 Ill. Reg. 14962, effective September 21, 1994; amended in R94-14 at 18 III. Reg. 15744, effective October 17, 1994; amended in R94-15 at 18 III. Reg. 16379, effective October 25, 1994; amended in R94-16 at 18 III. Reg. 16929, effective November 15, 1994; amended in R94-21, R94-31 and R94-32 at 19 Ill. Reg. 6823, effective May 9, 1995; amended in R94-33 at 19 Ill. Reg. 7344, effective May 22, 1995; amended in R95-2 at 19 III. Reg. 11066, effective July 12, 1995; amended in R95-16 at 19 III. Reg. 15176, effective October 19, 1995; amended in R96-5 at 20 III. Reg. 7590, effective May 22, 1996; amended in R96-16 at 21 Ill. Reg. 2641, effective February 7, 1997; amended in R97-17 at 21 III. Reg. 6489, effective May 16, 1997; amended in R97-24 at 21 III. Reg. 7695, effective June 9, 1997; amended in R96-17 at 21 Ill. Reg. 7856, effective June 17, 1997;

amended in R97-31 at 22 Ill. Reg. 3497, effective February 2, 1998; amended in R98-17 at 22 Ill. Reg. 11405, effective June 22, 1998; amended in R01-9 at 25 III. Reg. 108, effective December 26, 2000; amended in R01-11 at 25 Ill. Reg. 4582, effective March 15, 2001; amended in R01-17 at 25 Ill. Reg. 5900, effective April 17, 2001; amended in R05-16 at 29 Ill. Reg. 8181, effective May 23, 2005; amended in R05-11 at 29 Ill. Reg. 8892, effective June 13, 2005; amended in R04-12/20 at 30 III. Reg. 9654, effective May 15, 2006; amended in R07-18 at 31 III. Reg. 14254, effective September 25, 2007; amended in R08-6 at 32 III. Reg. 1387, effective January 16, 2008; amended in R07-19 at 33 Ill. Reg. 11982, effective August 6, 2009; amended in R08-19 at 33 Ill. Reg. 13326, effective August 31, 2009; amended in R10-7 at 34 Ill. Reg. 1391, effective January 11, 2010; amended in R10-8 at 34 Ill. Reg. 9069, effective June 25, 2010; amended in R10-20 at 34 III. Reg. 14119, effective September 14, 2010; amended in R11-23 at 35 Ill. Reg. 13451, effective July 27, 2011; amended in R12-24 at 37 Ill. Reg. 1662, effective January 28, 2013; amended in R13-1 at 37 Ill. Reg. 1913, effective February 4, 2013; amended in R14-7 at 37 III. Reg. 19824, effective November 27, 2013; amended in R14-16 at 38 III. Reg. 12876, effective June 9, 2014; amended in R15-5 at 39 Ill. Reg. 5410, effective March 24, 2015; amended in R17-2 at 41 III. Reg. 1096, effective January 23, 2017; amended in R17-9 at 41 III. Reg. 4173, effective March 24, 2017; amended in R17-11 at 41 Ill. Reg. 13389, effective October 23, 2017; amended in R19-15 at 44 Ill. Reg. \_\_\_\_\_, effective

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#### SUBPART B: DEFINITIONS

### Section 211.7150 Volatile Organic Material (VOM) or Volatile Organic Compound (VOC)

"Volatile organic material" (also "VOM") or "volatile organic compound" (also "VOC") means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, that participates in atmospheric photochemical reactions.

a) This definition of VOM includes any organic compound that participates in atmospheric photochemical reactions, other than the compounds listed in this subsection (a). USEPA has determined that the compounds listed in this subsection (a) have negligible photochemical reactivity.

2-Amino-2-methylpropan-1-ol (CAS No. 124-68-5)
Bis(difluoromethoxy)difluoromethane (HFE-236cal2, CAS No. 78522-47-1)
1.2 Bis(difluoromethoxy) 1.1.2.2 tetrefluoroethone (HFE-238nox13, CAS)

1,2-Bis(difluoromethoxy)-1,1,2,2-tetrafluoroethane (HFE-338pcc13, CAS No. 188690-78-0)

tertiary-Butyl acetate (1,1-dimethylethyl acetic acid ester, CAS No. 540-88-5)

1-Chloro-1,1-difluoroethane (HCFC-142b, CAS No. 75-68-3)

Chlorodifluoromethane (CFC-22, CAS No. 75-45-6)

1-Chloro-1-fluoroethane (HCFC-151a, CAS No. 1615-75-4)

Chlorofluoromethane (HCFC-31, CAS No. 593-70-4)

Chloropentafluoroethane (CFC-115, CAS No. 76-15-3)

2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124, CAS No. 2837-89-0)

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1-Chloro-4-(trifluoromethyl)benzene (parachlorobenzotrifluoride (PCBTF), CAS No. 98-56-6)
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(1E)-1-Chloro-3,3,3-trifluoroprop-1-ene (trans-1-chloro-3,3,3-trifluoroprop-1-ene, CAS No. 102687-65-0)

1,1,1,2,2,3,4,5,5,5-Decafluoro-3-methoxy-4-trifluoromethylpentane (HFE-7300, CAS No. 132182-92-4)

1,1,1,2,3,4,4,5,5,5-Decafluoropentane (<u>HFC-4310mee</u>, <del>HFC 43-10mee</del>, CAS No. 138495-42-8)

Dichlorodifluoromethane (CFC-12, CAS No. 75-71-8)

1,1-Dichloro-1-fluoroethane (HCFC-141b, CAS No. 1717-00-6)

Dichloromethane (methylene chloride, CAS No. 75-09-2)

1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb, CAS No. 507-55-1)

3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca, CAS No. 422-56-0)

1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb, CAS No. 507-55-1)

1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114, CAS No. 76-14-2)

1,1-Dichloro-2,2,2-trifluoroethane (HCFC-123, CAS No. 306-83-2)

1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a, CAS No. 354-23-4)

1,1-Difluoroethane (HFC-152a, CAS No. 75-37-6)

Difluoromethane (HFC-32, CAS No. 75-10-5)

(Difloromethoxy)difluoromethane (HFE-134, CAS No. 1691-17-4)

1-(Difloromethoxy)-2-[(difluoromethoxy)(difluoro)methoxy]-1,1,2,2-tetrafluoroethane (HFE-43-10pccc124, CAS No. 188690-77-9)

2-(Difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane (CAS No. 163702-08-7)

Dimethyl carbonate (CAS No. 616-38-6)

Ethane(CAS No. 74-84-0)

2-(Ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane (CAS No. 163702-06-5)

3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl)hexane (HFE-7500, CAS No. 297730-93-9)

1-Ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (HFE-7200, CAS No. 163702-05-4)

Ethylfluoride (HFC-161, CAS No. 353-36-6)

Fluoroethane (ethyl fluoride, HFC-161, CAS No. 353-36-6)

1,1,1,2,2,3,3-Heptafluoro-3-methoxypropane (HFE-7000, CAS No. 375-03-1)

1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea, CAS No. 431-89-0)

(Z)-1,1,1,4,4,4-Hexafluorobut-2-ene (HFO-1336mzz-Z, CAS No. 692-49-9)

1,1,1,2,3,3-Hexafluoropropane (HFC-236ea, CAS No. 431-63-0)

1,1,1,3,3,3-Hexafluoropropane (HFC-236fa, CAS No. 690-39-1)

Methane (CAS No. 74-82-8)

Methyl acetate (methyl ethanoate, CAS No. 79-20-9)

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4-Methyl-1,3-dioxolan-2-one (propylene carbonate, CAS No. 108-32-7)
Methyl formate (methyl methanoate, CAS No. 107-31-3)
1,1,1,2,2,3,3,4,4-Nonafluoro-4-methoxybutane (HFE-7100, CAS No.
   163702-07-6)
1,1,1,3,3-Pentafluorobutane (HFC-365mfc, CAS No. 406-58-6)
Pentafluoroethane (HFC-125, CAS No. 354-33-6)
1,1,1,2,3-Pentafluoropropane (HFC-245eb, CAS No. 431-31-2)
1,1,1,3,3-Pentafluoropropane (HFC-245fa, CAS No. 460-73-1)
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1,1,2,2,3-Pentafluoropropane (HFC-245ca, CAS No. 679-86-7)

1,1,2,3,3-Pentafluoropropane (HFC-245ea, CAS No. 24270-66-4)

1,1,1,2,3-Pentafluoropropane (HFC-245eb, CAS No. 431-31-2) 1,1,1,3,3-Pentafluoropropane (HFC-245fa, CAS No. 460-73-1)

Perfluorocarbon compounds that fall into the following classes:

Cyclic, branched, or linear, completely fluorinated alkanes

Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations

Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations

Sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

Propan-2-one (acetone or dimethylketone, CAS No. 67-64-1)

Siloxanes: cyclic, branched, or linear completely-methylated

Tetrachloroethene (perchloroethylene, CAS No. 127-18-4)

1,1,1,2-Tetrafluoroethane (HFC-134a, CAS No. 811-97-2)

1,1,2,2-Tetrafluoroethane (HFC-134, CAS No. 359-35-3)

1,1,1,2-Tetrafluoroethane (HFC-134a, CAS No. 811-97-2)

(1E)-1,3,3,3-Tetrafluoropropene (trans-1,3,3,3-tetrafluoropropene, HFO-1234ze, CAS No. 29118-24-9)

2,3,3,3-Tetrafluoroprop-1-ene (HFO-1234yf, CAS No. 754-12-1)

1,1,2,2-Tetrafluoro-1-(2,2,2-trifluoroethoxy)ethane (HFE-347pcf2, CAS No. 406-78-0)

1,1,1-Trichloroethane (methyl chloroform, CAS No. 71-55-6)

1,1,2,2-tetrafluoro-1-(2,2,2-trifluoroethoxy)ethane (HFE-347pcf2, CAS No. 406-78-0)

Trichlorofluoromethane (CFC-11, CAS No. 75-69-4)

1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113, CAS No. 76-13-1)

1,1,1-Trifluoroethane (HFC-143a, CAS No. 420-46-2)

Trifluoromethane (HFC-23, CAS No. 75-46-7)

b) For purposes of determining VOM emissions and compliance with emissions limits, VOM will be measured by the test methods in the approved implementation plan or 40 CFR 60, appendix A, incorporated by reference at 35 Ill. Adm. Code 215.105, 218.112, and 219.112, as applicable, or by sourcespecific test methods that have been established pursuant to a permit issued under a program approved or promulgated under Title V of the Clean Air Act; under 40 CFR 51, subpart I or appendix S, incorporated by reference at 35 Ill. Adm. Code 218.112 and 219.112; or under 40 CFR 52.21, incorporated by reference at 35 III.

Adm. Code 218.112 and 219.112, as applicable. Where such a method also measures compounds with negligible photochemical reactivity, these <u>negligibly reactive negligibly reactive compounds</u> may be excluded as VOM if the amount of such compounds is accurately quantified and the exclusion is approved by the Agency.

- c) As a precondition to excluding these negligibly-reactive compounds as VOM, or at any time thereafter, the Agency may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the Agency, the amount of <u>negligibly reactive negligibly reactive</u> compounds in the source's emissions.
- d) The USEPA will not be bound by any State determination as to appropriate methods for testing or monitoring <u>negligibly reactive negligibly-reactive</u> compounds if such determination is not reflected in any of the test methods in subsection (b).