ILLINOIS POLLUTION CONTROL BOARD
September 8, 1988

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

PROPOSED RULE. FIRST NOTICE.

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.

The Board is amenable to expediting the rulemaking process as much as possible consistent with the Administrative Procedure Act; however, the Board notes that a rulemaking proceeding can be expedited only inasmuch as the proponents and participants demonstrate a willingness to cooperate. For its part, the Board today sends the proposal to First Notice. However, due to the expedited nature of this proceeding, the Board takes no position at this time on the substance of the proposed text.

The Hearing Officer is directed to schedule hearings as soon as practicable.

ORDER

The Board hereby proposes the following amendments to 35 Ill. Adm. Code 211 and 215 for First Notice publication. The Clerk is directed to submit these proposed amendments to the Secretary of State's Office for publication in the Illinois Register.

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 211.122 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 Section 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 215.104 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 Parts 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 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 _____).

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, 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:

$$H_r = K \frac{\sum_{i=1}^{n} C_i H_i}{}$$

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 value corresponding to one mole is 20 C.

K = Constant, 1.740×10^{7} $\frac{1}{\text{ppm}}$ $\frac{\text{g mole}}{\text{scm}}$ $\frac{\text{MJ}}{\text{kcal}}$

where

standard temperature for $\frac{\text{g mole}}{\text{scm}}$ is 20 C.

C_1 = 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_1 = 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, 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: 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
90	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 acetocetate
~~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	~~s~~b-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~~ sulfonylchloride
~~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)	~~methyliterbutyl~~ 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 Order was adopted on the 8th day of September, 1988, by a vote of 7-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board