

ORDER OF THE STATE OF WISCONSIN
NATURAL RESOURCES BOARD REPEALING, RENUMBERING,
RENUMBERING AND AMENDING, AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board adopts an order to **repeal** NR 438.03(1)(a)1. and 2. and 438.03 Table 1; to **renumber** NR 400.02(162)(a) and (z); to **renumber and amend** NR 400.02(162)(b) to (y) and 438.03(1)(a)(intro.) and 438.03 Table 2 and footnotes 3 to 6; to **amend** NR 424.05(2)(a)(intro.) and (6)(a)3., 438.03(1)(am) and 445.06(2)(a)5.; and to **create** NR 400.02(162)(a)(intro.) and 45. to 48. and (b), 424.05(2)(c) and (6)(b)5. to 7. and 438.03 Table 1 footnote 7 relating to excluding additional organic compounds for the volatile organic compound (VOC) definition and to VOC emission limits for yeast manufacturing.

AM-18-05

Summary Prepared by the Department of Natural Resources

1. **Statute interpreted:** s. 285.11(6), Stats. The State Implementation Plan developed under s. 285.11(6), Stats., is revised.

2. **Statutory authority:** ss. 227.11(2)(a), and 285.11(1) and (6), Stats.

3. **Explanation of agency authority:**

Section 227.11(2)(a), Stats., gives state agencies general rule-making authority. Section 285.11(1) Stats., gives the Department the authority to promulgate rules to implement and consistent with, ch. 285, Stats. Section 285.11(6), Stats., authorizes the Department to develop and revise a state implementation plan for the prevention, abatement and control of air pollution.

4. **Related statute or rule:**

The proposed rule revision on the definition of VOCs relates to existing rules, which define VOCs in s. NR400.02(162), as well as the emission reporting requirements in ch. NR438 and the VOC emission limits in chs. NR 419 to 424. The proposed yeast manufacturing rule revision relates to the emission limit requirements for yeast manufacturing facilities in s. NR 424.05 and the MACT requirements for those facilities under 42 USC 7412.

5. **Plain language analysis:**

On Nov. 29, 2004 U.S. EPA adopted revisions to the federal definition of “volatile organic compounds” (“VOCs”) in 40 CFR 51.100(s). The Department proposes to revise the definition of VOCs in s. NR 400.02(162) such that it conforms with the corresponding federal definition. The proposed changes are as follow:

I. Adding the four compounds to the list of compounds excluded from the definition of VOC:

- a. 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-C₃F₇OCH₃)
(known as HFE-7000)
- b. 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane
(known as HFE-7500, HFE-s702, T-7145, and L-15381)
- c. 1,1,1,2,3,3,3-heptafluoropropane (known as HFC 227ea)
- d. methyl formate (HCOOCH₃)

II. A nomenclature clarification to two previously excluded compounds:

- a. Adding the nomenclature designation “HFE-7100” to 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (C₄F₉OCH₃)
- b. Adding the nomenclature designation “HFE-7200” to 1-ethoxyl-1,1,2,2,3,3,4,4,4-nonafluorobutane (C₄F₉OC₂H₅)

These names are widely accepted alternative designations for the two compounds.

III. Exclusion of one compound, t-butyl acetate (also known as “tertiary butyl acetate” or informally as “TBAC”), from the definition of VOC for purposes of VOC emission limitation or VOC content requirements, but not for purposes of all recordkeeping, emission reporting, and inventory requirements. When EPA has excluded a compound from the VOC definition in the past, the compound was excluded from all VOC requirements. This is not the case with TBAC. It is excluded from the definition of VOC for purposes of VOC emission limitations and content requirements only. However it remains a VOC for other requirements and needs to be reported separate from other non-exempt VOCs. Consequently t-butyl acetate needs to be incorporated in the list of reportable air contaminants in the emission inventory requirements of s. NR 438.03.

The Department is also proposing changes to VOC control requirements for yeast manufacturing in s. NR 424.05 to be consistent with US EPA control requirements for this industry. The proposed changes to s. NR 424.05 provide that 98% of the fermentation batches over any 12 consecutive month period must meet the existing VOC concentration limits. Associated recordkeeping changes are also proposed to ensure the facility maintains the information necessary to calculate the percent of batches meeting the VOC concentration limits.

6. Summary of, and comparison with, existing or proposed federal regulation:

VOC definition

Volatile organic compounds are those organic compounds which contribute to ozone formation through atmospheric photochemical reactions. It has been EPA’s policy that organic compounds with a negligible level of reactivity need not be regulated to reduce ozone. The EPA lists these compounds in its regulations at 40 CFR 51.100(s) and excludes them from the definition of VOC. The VOC definition in s. NR 400.02(162) has been identical with the EPA definition.

On November 29, 2004, EPA revised the definition of VOC by identifying additional compounds to be excluded (Federal Register 69 FR 69290 and 69 FR 69298). Following these EPA actions the Department is proposing to revise the definition of VOC in s. NR 400.02(162) such that it conforms with the federal

regulation.

Yeast manufacturing

Section 112 of the Clean Air Act (CAA) requires that the EPA promulgate emission standards for all categories of major sources of hazardous air pollutants (HAP). EPA identified the nutritional yeast manufacturing source category as a major source of acetaldehyde emissions, a listed federal HAP. On July 16, 1992, the EPA published an initial list of categories which included yeast manufacturing facilities. The EPA promulgated final national emissions standards for hazardous air pollutants (NESHAP) for manufacturing of nutritional yeast on May 21, 2001. These standards implement section 112(d) of the CAA by requiring all major sources to meet HAP emission standards reflecting the application of the maximum achievable control technology (MACT). MACT established limitations on VOC emissions as a surrogate for acetaldehyde, which makes up only a portion of the total VOC emitted from the yeast fermentation process. The emission limitations include both VOC concentration limits and a percent-of-batches requirement. The VOC concentration limits apply to each yeast batch and are expressed as the VOC concentration in the exhaust from the fermentation vessel averaged over the duration of the batch. The percent-of batches provision requires that at least 98% of the batches on a rolling 12-month average comply with the concentration limits.

As part of its ambient air quality standard attainment strategy for ozone, the Department developed a series of VOC limits for specific source categories that represented reasonably available control technology (RACT). Included in these RACT limits were VOC control requirements for yeast manufacturing, which became effective as a final rule on June 1, 1994 (s. NR 424.05, Wis. Adm. Code). That rule also established VOC concentration limits in the exhaust from the fermentation vessel averaged over the duration of the batch. However, that rule contained no provision parallel to the percent-of-batches requirement contained in the recent EPA MACT rule for yeast manufacturing. Consequently the existing Department RACT rule requires that 100% of all batches meet the concentration limits. The proposed revision will incorporate the 98% compliance requirement into the RACT rule for yeast manufacturing.

7. Comparison with rules in adjacent states:

VOC definition

Wisconsin and all adjacent states have adopted a definition for VOC which is identical, or to a large extent identical, with EPA's definition in the regulation at 40 CFR 51.100(s). None of the adjacent states have incorporated the recent EPA's revisions to the VOC definition into their regulations yet.

Illinois: The definition of VOCs is identical with EPA's previous definition; the recent EPA revisions have not been incorporated yet (Reference: Title 35 of the Illinois Administrative Code, Section 211.7150).

Iowa: The definition of VOCs is identical with EPA's previous definition; the state regulation refers to EPA's definition of April 9, 1998. The recent EPA revisions have not been incorporated yet (reference: IOWA Administrative Code – ENVIRONMENTAL PROTECTION COMMISSION, 567—

20.2(455B)).

Michigan: The definition of VOCs is to a large extent similar to EPA's previous definition. The recent EPA revisions have not been incorporated yet (reference: Department of Environmental Quality, Air pollution Control, Part 1, R 336.1122(f)).

Minnesota: The definition of VOCs is identical with current EPA's definition. The recent EPA revisions are indirectly incorporated in the state rule due to the rule language in CHAPTER 7005, subp. 45 UU. It says, as the last item in the list of compounds excluded from the definition of VOC, "... any other compound determined by the United States Environmental Protection Agency to be negligibly photochemically reactive, upon publication of the determination in the Federal Register".

Yeast manufacturing

The Department is not aware of any yeast manufacturing facilities located in Illinois, Michigan or Minnesota. A yeast manufacturing facility is located in Cedar Rapids, Iowa. Cedar Rapids is currently designated as an ozone attainment area, and the facility there is a major source subject to prevention of significant deterioration (PSD) permit requirements including best available control technology (BACT). EPA has fully delegated the PSD program in Iowa to the Iowa Department of Natural Resources (IDNR). The IDNR has issued a PSD permit to the facility in Cedar Rapids using the same approach used by EPA in the EPA MACT. The permit establishes VOC concentration limits averaged over the fermentation batch cycle and requires that at least 98% of the batches in each rolling 12 month period meet the concentration limits.

While not an adjacent state, the state of Maryland developed VOC control rules for yeast manufacturing as part of its ozone attainment strategy. (Code of Maryland Regulations, Title 26 Subtitle 11 Chapter 19.) Maryland's rule establishes VOC concentration limits consistent with those in s. NR 424.05, Wis. Adm. Code, but like the EPA MACT and IDNR PSD permit, only requires that these limits be met for 98% of all fermentation batches in each 12-month period.

8. Summary of factual data and analytical methodologies:

Since the proposed rule revisions are based on changes to federal air regulation, the Department is relying on the factual data and analytical methodologies used by U.S. EPA to support the federal rule-making. The corresponding federal regulations are published in Federal Register: 66 FR 27876 (Manufacturing of Nutritional Yeast), 69 FR 69290 (VOC definition, exclusion of four compounds), and 69 FR 69298 (VOC definition, exclusion of t-butyl acetate).

9. Analysis and supporting documents used to determine effect on small business or in preparation of economic impact report: none

10. Effect on small business:

There is no known effect on small business due to the revision of the VOC definition.

The only yeast manufacturer in Wisconsin affected by the proposed changes to s. NR 424.05, Wis. Adm. Code, is not considered to be a small business.

11. Agency contact person:

Farrokh Ghoreishi, 608-264-8868, farrokh.ghoreishi @dnr.state.wi.us

SECTION 1. NR 400.02(162)(a) is renumbered NR 400.02(162)(a)1.

SECTION 2. NR 400.02(162)(a)(intro.) is created to read:

NR 400.02(162)(a)(intro.) Organic compounds excluded for all purposes:

SECTION 3. NR 400.02(162)(b) to (y) are renumbered NR 400.02(162)(a)2. to 44. and as renumbered NR 400.02(162)(a)40. and 42. are amended to read:

NR 400.02(162)(a)40. 1,1,1,2,2,3,3,4,4-Nonafluoro-4-methoxybutane (C₄F₉OCH₃ or HFE-7100).

42. 1-Ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C₄F₉OC₂H₅ or HFE-7200).

SECTION 4. NR 400.02(162)(a)45. to 48. are created to read

NR 400.02(162)(a)45. 1,1,1,2,2,3,3-Heptafluoro-3-methoxy-propane (n-C₃F₇OCH₃ or HFE-7000).

46. 3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE-7500).

47. 1,1,1,2,3,3,3-Heptafluoropropane (HFC 227ea).

48. Methyl formate (HCOOCH₃).

SECTION 5. NR 400.02(162)(z) is renumbered to NR 400.02(162)(a)49.

SECTION 6. NR 400.02(162)(b) is created to read:

NR 400.02(162)(b) The following compound is subject to all recordkeeping, emissions reporting, photochemical dispersion modeling, inventory requirements and emissions fees which apply to VOCs and shall be uniquely identified in emission reports, but is not considered a VOC for purposes of VOC emissions limitations or VOC content requirements: t-butyl acetate.

SECTION 7. NR 424.05(2)(a)(intro.) is amended to read:

NR 424.05(2)(a)(intro.) Except as provided in ~~par.~~ pars. (b) and (c), no owner or operator of a yeast manufacturing facility may cause, allow or permit the average concentration of VOCs in the exhaust gas stream from a fermenter ~~during~~ over the duration of a fermentation batch to exceed the levels in subds. 1. to 3. These levels are on a saturated water basis and are based on total VOCs expressed as propane.

SECTION 8. NR 424.05(2)(c) is created to read:

NR 424.05(2)(c) Compliance with the emission limitations in par. (a) shall be achieved for at least 98% of all fermentation batches subject to the emission limitations in par. (a) over any 12 consecutive month period.

SECTION 9. NR 424.05(6)(a)3. is amended to read:

NR 424.05(6)(a)3. The fermentation cycle for which a fermenter is being used, recorded as either trade, first generation or stock.

SECTION 10. NR 424.05(6)(b)5. to 7. are created to read:

NR 424.05(6)(b)5. For each fermentation batch subject to an emission limitation in sub. (2)(a), the average concentration of VOC in the exhaust gas stream over the duration of the fermentation batch.

6. The number of fermentation batches subject to an emission limitation in sub. (2)(a) completed during each month.

7. The percent of all completed fermentation batches in compliance with the applicable emission limitation in sub. (2)(a) over the previous 12 consecutive month period.

SECTION 11. NR 438.03(1)(a)(intro.) is renumbered to NR 438.03(1)(a) and amended to read:

NR 438.03(1)(a) Except as provided in par. (am), any person owning or operating a facility that emits an air contaminant in quantities above applicable reporting levels, except indirect sources of air pollution, shall annually submit to the department an emission inventory report of annual, actual emissions or, for particulate matter, PM₁₀, sulfur dioxide, nitrogen oxides, carbon monoxide and volatile organic compounds, throughput information sufficient for the department to calculate its annual, actual emissions. The reportable air contaminants and applicable reporting levels are listed in ~~the following tables:~~ Table 1.

SECTION 12. NR 438.03(1)(a)1. and 2. are repealed.

SECTION 13. NR 438.03(1)(am) is amended to read:

NR 438.03(1)(am)1. ~~Beginning with emissions reported for calendar year 2004, the~~ The owner or operator of a facility described by a standard industrial classification code listed in Table D of s. NR 445.11, or that has annual actual emissions of less than 5 tons of particulate matter and less than 3 tons

of volatile organic compounds, may limit the information on hazardous air contaminants included in the annual emission inventory report to those contaminants identified under s. NR 445.11(1)(a) or (b).

2. Notwithstanding subd. 1., the owner or operator shall continue to report annual emissions of any air contaminant reported in prior calendar years for the facility, provided annual, actual emissions are greater than the reporting level in Table ~~2~~ 1.

SECTION 14. NR 438.03 Table 1 is repealed.

SECTION 15. NR 438.03 Table 2 is renumbered NR 438.03 Table 1, and as renumbered, Table 1 and footnotes 3, 4, 5 and 6 are amended to read:

NR 438.03 Table 1

Table 1
Reporting Levels for Calendar Years 2004 and Later

Air Contaminant Name	CAS Number ¹	Reporting Level (lbs/yr)
Acetaldehyde	75-07-0	404
Acetamide	60-35-5	6,000
Acetic acid	64-19-7	5,774
Acetic anhydride	108-24-7	4,912
Acetone	67-64-1	100,000
Acetonitrile	75-05-8	6,000
Acetophenone	98-86-2	6,000
2-Acetylaminofluorene	53-96-3	6,000
Acrolein	107-02-8	75
Acrylamide	79-06-	0.683

	1	
Acrylic acid	79-10-	88.8
	7	
Acrylonitrile	107-	13.1
	13-1	
Adipic Acid <u>acid</u>	124-	1,176
	04-9	
Adiponitrile	111-	2,080
	69-3	
Adriamycin	23214-	1.22
	92-8	
Aflatoxins	1402-	1.22
	68-2	
Aldrin	309-	58.8
	00-2	
Allyl alcohol	107-	279
	18-6	
Allyl chloride	107-	736
	05-1	
Allyl glycidyl ether	106-	1,098
	92-3	
Aluminum alkyls and soluble salts, as Al	7429- ²	471
	90-5	
Aluminum pyro powders, as Al	7429- ²	1,176
	90-5	
o-Aminoazotoluene (2-Aminoazotoluene)	97-56-	0.808
	3	
4-Aminobiphenyl	92-67-	0.148
	1	
Amitrole	61-82-	3.29
	5	
3 Ammonia	7664-	4,097
	41-7	
Ammonium perfluorooctanoate	3825-	2.35
	26-1	
Aniline	62-53-	1,792
	3	
o-Anisidine and o-anisidine hydrochloride (mixtures and isomers)	29191- ²	22.2
	52-4	
Antimony and compounds, as Sb	7440- ²	118
	36-0	
Antimony trioxide	1309-	17.8
	64-4	
ANTU	86-88-	70.6
	4	
Arsenic, elemental and inorganic compounds, as As	7440- ²	0.207
	38-2	
3 Arsine	7784-	4.44

	42-1	
Asbestos, all forms	1332- ²	1.22
	21-4	
Atrazine	1912-	1,176
	24-9	
Azathioprine	446-	1.74
	86-6	
Azinphos-methyl	86-50-	47.1
	0	
Barium, soluble compounds, as Ba	7440- ²	118
	39-3	
Benomyl	17804-	2,353
	35-2	
Benz(a)anthracene	56-55-	8.08
	3	
Benzene	71-43-	114
	2	
Benzidine	92-87-	0.0133
	5	
Benzo(a)phenanthrene (Chrysene)	218-	12
	01-9	
Benzo(j,k)fluorene	206-	12
	44-0	
Benzo(b)fluoranthene	205-	1.22
	99-2	
Benzo(j)fluoranthene	205-	1.22
	82-3	
Benzo(k)fluoranthene	207-	1.22
	08-9	
Benzo(a)pyrene	50-32-	0.808
	8	
Benzotrichloride	98-07-	1.22
	7	
Benzoyl chloride	98-88-	940
	4	
Benzoyl peroxide	94-36-	1,176
	0	
Benzyl acetate	140-	6,000
	11-4	
Benzyl chloride	100-	1,218
	44-7	
Beryllium and beryllium compounds, as Be	7440- ²	0.37
	41-7	
Biphenyl	92-52-	297
	4	
Bischloroethyl nitrosourea	154-	1.22
	93-8	
N,N-Bis (2-chloroethyl)-2-	494-	1.22

naphthylamine (Chlornaphazine)	03-1	
Bis(chloromethyl) ether (BCME) and technical grade	542- 88-1	1.22
Bis(2-dimethylaminoethyl) ether (DMAEE)	3033- 62-3	77.1
Bismuth telluride, as Bi ₂ Te ₃ : Se- Doped	1304- 82-1	1,176
Borates, tetra, sodium salts, decahydrate	1303- ² 96-4	1,176
Borates, tetra, sodium salts, pentahydrate	1303- ² 96-4	235
Boron tribromide	10294- 33-4	3,352
3 Boron trifluoride	7637- 07-2	907
Bromacil	314- 40-9	2,353
3 Bromine	7726- 95-6	154
3 Bromine pentafluoride	7789- 30-2	168
Bromodichloromethane	75-27- 4	24
Bromoform	75-25- 2	1,216
1,3-Butadiene	106- 99-0	3.17
sec-Butanol	78-92- 2	100,000
tert-Butanol	75-65- 0	100,000
4 2-Butoxyethanol (Ethylene glycol monobutyl ether; EGBE; butyl cellosolve)	111- 76-2	6,000
n-Butyl alcohol (n-Butanol)	71-36- 3	6,000
n-Butyl acetate	123- 86-4	100,000
<u>t-Butyl acetate</u>	<u>540-</u> <u>88-5</u>	<u>see</u> <u>footnote 7</u>
n-Butyl acrylate	141- 32-2	2,467
n-Butylamine	109- 73-9	4,892
Butylated hydroxyanisole (BHA)	25013- 16-5	6,000
tert-Butyl chromate, as Cr	1189- 85-1	0.074

n-Butyl glycidyl ether (BGE)	2426- 08-6	6,000
n-Butyl lactate	138- 22-7	6,000
o-sec-Butylphenol	89-72- 5	6,000
p-tert-Butyltoluene	98-51- 1	1,426
C.I. Basic Red 9 monohydrochloride	569- 61-9	12.5
Cadmium and cadmium compounds, as Cd	7440- ² 43-9	0.494
Calcium cyanamide	156- 62-7	118
Calcium hydroxide	1305- 62-0	1,176
Calcium oxide	1305- 78-8	471
Camphor (synthetic)	76-22- 2	2,930
Caprolactam (aerosol and vapor)	105- 60-2	5,444
Captafol	2425- 06-1	23.5
Captan	133- 06-2	1,176
Carbaryl	63-25- 2	1,176
Carbofuran	1563- 66-2	23.5
Carbon dioxide	124- 38-9	100,000 tons
Carbon monoxide	630- 08-0	10,000
Carbon black	1333- 86-4	823
Carbon disulfide	75-15- 0	6,000
Carbon tetrabromide	558- 13-4	319
Carbon tetrachloride	56-23- 5	59.2
Carbonyl fluoride	353- 50-4	1,270
Carbonyl sulfide	463- 58-1	6,000
Catechol (Pyrocatechol)	120- 80-9	5,298

Refractory Ceramic Fibers (respirable size)	2	1.22
Cesium hydroxide	21351-79-1	471
Chloramben	133-90-4	6,000
Chlorambucil	305-03-3	0.00683
Chlordane	57-74-9	118
Chlorendic acid	115-28-6	34.2
Chlorinated camphene (Toxaphene)	8001-35-2	2.78
Chlorinated diphenyl oxide	55720-99-5	118
Chlorinated paraffins (C12; 60% chlorine)	108171-26-2	35.5
3 Chlorine	7782-50-5	341
3 Chlorine dioxide	10049-04-4	64.9
3 Chlorine trifluoride	7790-91-2	124
Chloroacetic acid	79-11-8	6,000
2-Chloroacetophenone	532-27-4	74.4
Chlorobenzene (Monochlorobenzene)	108-90-7	6,000
Chlorobenzilate	510-15-6	6,000
o- Chlorobenzylidene malononitrile	2698-41-1	126
Chlorobromomethane	74-97-5	100,000
3 1-Chloro-1,1-difluoroethane (Hydrochlorofluorocarbon-142b; HCFC-142b; R-142b)	75-68-3	6,000
3 Chlorodifluoromethane (Hydrochlorofluorocarbon-22; HCFC-22; R-22)	75-45-6	6,000
1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU)	13010-47-4	1.22
3 Chlorofluorocarbon-11 (CFC-11; R-11; Trichlorofluoromethane)	75-69-4	6,000
3 Chlorofluorocarbon-111 (CFC-111)	954-56-3	6,000

3 Chlorofluorocarbon-112 (CFC-112)	76-12-0	6,000
3 Chlorofluorocarbon-113 (CFC-113; R-113; Trichlorotrifluoroethane)	76-13-1	6,000
3 Chlorofluorocarbon-114 (CFC-114; R-114; Dichlorotetrafluoroethane)	76-14-2	6,000
3 Chlorofluorocarbon-115 (CFC-115; R-115; Monochloropentafluoroethane)	76-15-3	6,000
3 Chlorofluorocarbon-12 (CFC-12; R-12; Dichlorodifluoromethane)	75-71-8	6,000
3 Chlorofluorocarbon-13 (CFC-13; R-13; Chlorotrifluoromethane)	75-72-9	6,000
3 Chlorofluorocarbon-211 (CFC-211; R-211)	422-78-6	6,000
3 Chlorofluorocarbon-212 (CFC-212; R-212)	3182-26-1	6,000
3 Chlorofluorocarbon-213 (CFC-213; R-213)	165-97-7	6,000
3 Chlorofluorocarbon-214 (CFC-214; R-214)	29255-31-0	6,000
3 Chlorofluorocarbon-215 (CFC-215; R-215)	4259-43-2	6,000
3 Chlorofluorocarbon-216 (CFC-216; R-216)	661-97-2	6,000
3 Chlorofluorocarbon-217 (CFC-217; R-217)	422-86-6	6,000
Chloroform	67-66-3	38.6
Chloromethyl methyl ether (CMME)	107-30-2	1.22
1-Chloro-1-nitropropane	600-25-9	2,378
Chloropicrin (Trichloronitromethane)	76-06-2	158
β -Chloroprene	126-99-8	1.22
o-Chlorostyrene	2039-87-4	6,000
o-Chlorotoluene	95-49-8	6,000
Chlorpyrifos	2921-88-2	47.1
Chromium (metal) and compounds other than Chromium (VI)	7440-47-3 ²	118
Chromium (VI): Chromic acid mists and dissolved Cr (VI) aerosols, as Cr	7440-47-3 ²	0.074
Chromium (VI): compounds and particulates	7440-47-3 ²	0.074

Chromyl chloride, as Cr	14977- 61-8	0.074
Cobalt, elemental, and inorganic compounds, as Co	7440- ² 48-4	4.71
3 Coke oven emissions	²	1.43
Copper and compounds, fume, as Cu	7440- ² 50-8	47.1
Copper and compounds, dusts and mists, as Cu	7440- ² 50-8	235
p-Cresidine	120- 71-8	20.7
Cresol (mixtures and isomers)	1319- ² 77-3	5,203
Crotonaldehyde	4170- ² 30-3	281
Crufomate	299- 86-5	1,176
Cumene (Isopropyl benzene)	98-82- 8	6,000
Cyanamide	420- 04-2	471
Cyanides, (inorganics), as CN	143- ² 33-9	1,635
Cyanogen	460- 19-5	5,008
Cyanogen chloride	506- 77-4	247
Cyclohexanol	108- 93-0	6,000
Cyclohexanone	108- 94-1	6,000
Cyclohexylamine	108- 91-8	6,000
Cyclonite	121- 82-4	118
Cyclopentadiene	542- 92-7	6,000
Cyclophosphamide	50-18- 0	5.23
Cyhexatin	13121- 70-5	1,176
2,4-D, salts and esters	94-75- 7	6,000
Dacarbazine	4342- 03-4	0.0635
DDE	72-55- 9	6,000
Demeton	8065-	24.9

	48-3	
Diacetone alcohol	123-	6,000
	42-2	
2,4-Diaminoanisole sulfate	39156-	240
	41-7	
2,4-Diaminotoluene (Toluene-2,4-diamine)	95-80- ²	0.808
	7	
Diazinon	333-	23.5
	41-5	
Diazomethane	334-	80.9
	88-3	
Dibenz(a,h)acridine	226-	8.08
	36-8	
Dibenz(a,j)acridine	224-	8.08
	42-0	
Dibenz(a,h)anthracene	53-70-	0.74
	3	
7H-Dibenzo(c,g)carbazole	194-	0.808
	59-2	
Dibenzofurans	132- ²	6,000
	64-9	
Dibenzo(a,e)pyrene	192-	0.808
	65-4	
Dibenzo(a,h)pyrene	189-	0.0808
	64-0	
Dibenzo(a,i)pyrene	189-	0.0808
	55-9	
Dibenzo(a,l)pyrene	191-	0.0808
	30-0	
³ Diborane	19287-	26.6
1,2-Dibromoethane (Ethylene Dibromide; EDB)	45-7	4.04
	106-	
	93-4	
1,2-Dibromo-3-chloropropane (DBCP)	96-12-	0.468
	8	
<u>1,2-Dibromoethane (Ethylene Dibromide; EDB)</u>	<u>106-</u>	<u>4.04</u>
	<u>93-4</u>	
2-N-Dibutylaminoethanol	102-	834
	81-8	
Dibutylphenyl phosphate	2528-	826
	36-1	
Dibutyl phthalate (Di-n-butyl phthalate)	84-74-	1,176
	2	
o-Dichlorobenzene (1,2-Dichlorobenzene)	95-50-	6,000
	1	
p-Dichlorobenzene (1,4-Dichlorobenzene)	106-	80.8
	46-7	
3,3'-Dichlorobenzidine	91-94-	2.61

	1	
1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5	47.1
Dichlorodiphenyltrichloroethane (DDT)	50-29-3	9.16
1,1-Dichloroethane (Ethylidene dichloride)	75-34-3	6,000
1,2-Dichloroethane (Ethylene dichloride; EDC)	107-06-2	34.2
Dichloroethyl ether (Bis(2-chloroethyl) ether)	111-44-4	6,000
1,2-Dichloroethylene	540-59-0	6,000
1,1-Dichloro-1-nitroethane	594-72-9	2,771
1,3-Dichloropropene	542-75-6	222
2,2-Dichloropropionic acid	75-99-0	1,176
Dichlorvos	62-73-7	44.4
Dicrotophos	141-66-2	58.8
Dicyclopentadiene	77-73-6	6,000
Dieldrin	60-57-1	58.8
Diethanolamine	111-42-2	471
Diethylamine	109-89-7	3,519
2-Diethylaminoethanol	100-37-8	2,255
Diethylene triamine	111-40-0	993
Diethyl hexyl phthalate (Bis(2-ethyl hexyl) phthalate; Di-sec-octyl phthalate; DEHP)	117-81-7	1,176
Diethyl phthalate	84-66-2	1,176
Diethylstilbestrol (DES)	56-53-1	0.00888
Diethyl sulfate	64-67-5	1.22
Diethyl ketone	96-22-0	100,000
1,1-Difluoroethane	75-37-6	6,000

Diglycidyl ether (DGE)	2238- 07-5	125
Diglycidyl resorcinol ether	101- 90-6	1.81
1,8-Dihydroxyanthroquinone (Danthron)	117- 10-2	40.4
Diisobutyl ketone	108- 83-8	6,000
Diisopropylamine	108- 18-9	4,869
N,N-Dimethyl acetamide	127- 19-5	6,000
Dimethylamine	124- 40-3	2,169
4-Dimethylaminoazobenzene	60-11- 7	0.683
Dimethylaniline (N,N-Dimethylaniline)	121- 69-7	5,830
3,3'-Dimethylbenzidine (o-Tolidine)	119- 93-7	1.22
Dimethyl carbamoyl chloride	79-44- 7	0.24
Dimethylethoxysilane	14857- 34-2	501
N,N-Dimethylformamide	68-12- 2	2,665
1,1-Dimethylhydrazine	57-14- 7	1.22
Dimethylphthalate	131- 11-3	1,176
Dimethyl sulfate	77-78- 1	1.22
Dinitolmide	148- 01-6	1,176
Dinitrobenzene (mixtures and isomers)	528- ² 29-0	243
Dinitro-o-cresol (4,6-Dinitro-o- cresol)	534- 52-1	47.1
2,4-Dinitrophenol	51-28- 5	6,000
Dinitrotoluene (mixtures and isomers)	25321- ² 14-6	47.1
n-Dioctyl phthalate	117- 84-0	6,000
1,4-Dioxane (1,4-Diethylene oxide)	123- 91-1	115
Dioxathion	78-34- 2	47.1

Diquat, respirable dust (various compounds) (Diquat dibromide)	2764- ² 72-9	23.5
Diquat, total dust (various compounds) (Diquat dibromide)	2764- ² 72-9	118
Direct black 38 (Benzidine-based dye)	1937- 37-7	0.423
Direct blue 6 (Benzidine-based dye)	2602- 46-2	0.423
Disperse Blue 1	2475- 45-8	683
Disulfiram	97-77- 8	471
Disulfoton	298- 04-4	23.5
Divinyl benzene (mixtures and isomers)	1321- ² 74-0	6,000
Endosulfan	115- 29-7	23.5
Endrin	72-20- 8	23.5
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106- 89-8	88.8
EPN	2104- 64-5	23.5
1,2-Epoxybutane (1,2-Butylene oxide)	106- 88-7	1,777
Ethanolamine	141- 43-5	1,763
Ethion	563- 12-2	94.1
4 2-Ethoxyethanol (Ethylene glycol monoethyl ether; EGEE; cellosolve)	110- 80-5	4,336
4 2-Ethoxyethyl acetate (Ethylene glycol monoethyl ether acetate; EGEEA; cellosolve acetate)	111- 15-9	6,000
Ethyl acetate	141- 78-6	100,000
Ethyl acrylate	140- 88-5	4,817
Ethylamine (Ethanamine)	75-04- 7	2,169
Ethyl amyl ketone	541- 85-5	6,000
Ethyl benzene	100- 41-4	6,000
Ethyl bromide	74-96- 4	5,243
Ethyl tert-butyl ether (ETBE)	637-	4,916

	92-3	
Ethyl butyl ketone	106-35-4	6,000
Ethyl chloride (Chloroethane)	75-00-3	6,000
Ethyl cyanoacrylate	7085-85-0	241
Ethylene chlorohydrin	107-07-3	1,077
Ethylenediamine	107-15-3	5,783
Ethylene glycol vapor and aerosol	107-21-1	6,000
Ethylene oxide	75-21-8	10.1
Ethylene thiourea	96-45-7	68.3
Ethylenimine (Aziridine)	151-56-4	207
Ethylidene norbornene	16219-75-3	6,000
N-Ethylmorpholine	100-74-3	5,542
Ethyl silicate	78-10-4	6,000
Fenamiphos	22224-92-6	23.5
Fensulfothion	115-90-2	23.5
Fenthion	55-38-9	47.1
Fine mineral fibers (includes mineral fiber emissions from facilities manufacturing or processing glass, rock or slag fibers, or other mineral derived fibers, of average diameter 1 micrometer or less)	2	6,000
Flour Dust (inhalable fraction)	2	118
Fluorides, (inorganics), as F	2	588
3 Fluorine	7782-41-4	366
Fonofos	944-22-9	23.5
Formaldehyde	50-00-0	68.3
Formamide	75-12-7	4,334
Formic acid	64-18-	2,214

	6	
Furan	110-00-9	1.22
Furfural	98-01-1	1,849
Furfuryl alcohol	98-00-0	6,000
3 Germanium tetrahydride	7782-65-2	147
Glutaraldehyde	111-30-8	67
Glycidol	556-52-5	1.22
Glycol ethers		2 6,000
Graphite (all forms except graphite fiber)	7782-42-5	471
3 Halon-1211 (Bromochlorodifluoromethane)	353-59-3	6,000
3 Halon-1301 (Bromotrifluoromethane)	75-63-8	6,000
3 Halon-2402 (Dibromotetrafluoroethane)	124-73-2	6,000
Heptachlor and heptachlor epoxide	76-44-8	11.8
Hexachlorobenzene (HCB)	118-74-1	0.471
Hexachlorobutadiene	87-68-3	50.2
Hexachlorocyclopentadiene	77-47-4	26.2
Hexachloroethane	67-72-1	222
Hexachloronaphthalene	1335-87-1	47.1
Hexamethyl phosphoramidate	680-31-9	1.22
Hexamethylene-1,6-diisocyanate (HDI)	822-06-0	0.888
n-Hexane	110-54-3	6,000
1,6- Hexanediamine	124-09-4	559
1-Hexene	592-41-6	6,000
sec-Hexyl acetate	108-84-9	6,000
Hexylene glycol	107-41-5	6,000

Hydrazine and hydrazine sulfate	302- ² 01-2	0.181
3 Hydrochlorofluorocarbon-121 (HCFC-121)	²	6,000
3 Hydrochlorofluorocarbon-122 (HCFC-122)	²	6,000
3 Hydrochlorofluorocarbon-123 (HCFC-123; R-123)	306- ² 83-2	6,000
3 Hydrochlorofluorocarbon-124 (HCFC-124; R-124)	63938- ² 10-3	6,000
3 Hydrochlorofluorocarbon-131 (HCFC-131)	²	6,000
3 Hydrochlorofluorocarbon-132b (HCFC-132b)	1649- 08-7	6,000
3 Hydrochlorofluorocarbon-133a (HCFC-133a)	75-88- 7	6,000
3 Hydrochlorofluorocarbon-141b (HCFC-141b; R-141b)	1717- 00-6	6,000
3 Hydrochlorofluorocarbon-21 (HCFC-21; Dichlorofluoromethane)	75-43- 4	6,000
3 Hydrochlorofluorocarbon-221 (HCFC-221)	²	6,000
3 Hydrochlorofluorocarbon-222 (HCFC-222)	²	6,000
3 Hydrochlorofluorocarbon-223 (HCFC-223)	²	6,000
3 Hydrochlorofluorocarbon-224 (HCFC-224)	²	6,000
3 Hydrochlorofluorocarbon-225ca (HCFC-225ca)	422- 56-0	6,000
3 Hydrochlorofluorocarbon-225cb (HCFC-225cb)	507- 55-1	6,000
3 Hydrochlorofluorocarbon-226 (HCFC-226)	²	6,000
3 Hydrochlorofluorocarbon-231 (HCFC-231)	²	6,000
3 Hydrochlorofluorocarbon-232 (HCFC-232)	²	6,000
3 Hydrochlorofluorocarbon-233 (HCFC-233)	²	6,000
3 Hydrochlorofluorocarbon-234 (HCFC-234)	²	6,000
3 Hydrochlorofluorocarbon-235 (HCFC-235)	²	6,000
3 Hydrochlorofluorocarbon-241 (HCFC-241)	²	6,000
3 Hydrochlorofluorocarbon-242 (HCFC-242)	²	6,000

3 Hydrochlorofluorocarbon-243 (HCFC-243)	2	6,000
3 Hydrochlorofluorocarbon-244 (HCFC-244)	2	6,000
3 Hydrochlorofluorocarbon-251 (HCFC-251)	2	6,000
3 Hydrochlorofluorocarbon-252 (HCFC-252)	2	6,000
3 Hydrochlorofluorocarbon-253 (HCFC-253)	2	6,000
3 Hydrochlorofluorocarbon-261 (HCFC-261)	2	6,000
3 Hydrochlorofluorocarbon-262 (HCFC-262)	2	6,000
3 Hydrochlorofluorocarbon-271 (HCFC-271)	2	6,000
3 Hydrochlorofluorocarbon-31 (HCFC-31; R-31; Chlorofluoromethane)	593-70-4	6,000
Hydrogenated terphenyls	61788-32-7	1,160
3 Hydrogen bromide	10035-10-6	3,247
3 Hydrogen chloride (Hydrochloric acid; Muriatic acid)	7647-01-0	1,777
3 Hydrogen cyanide	74-90-8	1,699
3 Hydrogen fluoride (Hydrofluoric acid)	7664-39-3	803
3 Hydrogen peroxide	7722-84-1	327
3 Hydrogen sulfide	7783-06-4	3,279
Hydroquinone	123-31-9	471
2-Hydroxypropyl acrylate	999-61-1	626
Indeno(1,2,3-cd)pyrene	193-39-5	8.08
Indium	7440-74-6	23.5
3 Iodine	7553-56-2	340
Iron dextran complex	9004-66-4	1.22
Iron oxide dust and fume, as Fe	1309-37-1	1,176
Iron salts, soluble, as Fe	2	235
Isobutyl acetate	110-	100,000

	19-0	
Isobutyl alcohol	78-83-	6,000
	1	
Isooctyl alcohol	26952-	6,000
	21-6	
Isophorone	78-59-	6,000
	1	
Isophorone diisocyanate	4098-	10.7
	71-9	
Isoprene	78-79-	1.22
	5	
4 2-Isopropoxyethanol	109-	6,000
	59-1	
Isopropylamine	75-31-	2,843
	0	
Isopropyl glycidyl ether	4016-	6,000
	14-2	
N-Isopropylaniline	768-	2,602
	52-5	
Kaolin	1332-	471
	58-7	
Kepone (Chlordecone)	143-	0.193
	50-0	
Ketene	463-	202
	51-4	
Lead Acetate, as Pb	301-	11.1
	04-2	
Lead compounds	7439- ²	6,000
	92-1	
Lead Phosphate, as Pb	7446-	74
	27-7	
Lindane and other hexachlorocyclohexane isomers	58-89- ²	2.87
	9	
Maleic anhydride	108-	94.4
	31-6	
Manganese, elemental and inorganic compounds, as Mn	7439- ²	47.1
	96-5	
Melphalan	148-	0.024
	82-3	
3 Mercury, as Hg, alkyl compounds	7439- ²	2.35
	97-6	
3 Mercury, as Hg, aryl compounds	7439- ²	23.5
	97-6	
3 Mercury, as Hg, inorganic forms including metallic mercury	7439- ²	5.88
	97-6	
Mesityl oxide	141-	6,000
	79-7	
Mestranol	72-33-	1.22

	3	
Methacrylic acid	79-41-	6,000
	4	
Methanol	67-56-	6,000
	1	
Methomyl	16752-	588
	77-5	
Methoxychlor	72-43-	6,000
	5	
4 2-Methoxyethanol (Methyl Cellosolve; EGME)	109- 86-4	3,661
4 2-Methoxyethyl acetate (Methyl Cellosolve acetate; EGMEA)	110- 49-6	5,684
4-Methoxyphenol	150- 76-5	1,176
3 Methyl chloroform (1,1,1- Trichloroethane; TCA)	71-55- 6	6,000
Methyl ethyl ketone (2-Butanone; MEK)	78-93-	6,000
	3	
Methyl acetate	79-20-	100,000
	9	
Methyl acetylene	74-99-	100,000
	7	
Methyl acrylate	96-33-	1,657
	3	
Methylacrylonitrile	126- 98-7	646
Methylamine	74-89-	1,494
	5	
Methyl n-amyl ketone	110- 43-0	6,000
N-Methyl aniline	100- 61-8	516
Methyl bromide (Bromomethane)	74-83-	444
	9	
Methyl n-butyl ketone	591- 78-6	4,819
Methyl chloride (Chloromethane)	74-87-	6,000
	3	
5-Methyl chrysene	3697- 24-3	0.808
Methyl 2-cyanoacrylate	137- 05-3	214
Methylcyclohexanol	25639-	6,000
	42-3	
o-Methylcyclohexanone	583- 60-8	6,000
Methyl demeton	8022-	118

	00-2	
Methylene bisphenyl isocyanate	101-	12
(Methylene diphenyl isocyanate; MDI)	68-8	
3 Methylene chloride (Dichloromethane)	75-09-	1,890
	2	
4,4'-Methylene bis(2-chloroaniline)	101-	2.07
(MOCA)	14-4	
Methylene bis(4-cyclohexylisocyanate)	5124-	12.6
	30-1	
4,4'-Methylenedianiline (and	101- ²	1.93
dihydrochloride)	77-9	
Methyl ethyl ketone peroxide	1338-	472
	23-4	
Methyl formate	107-	6,000
	31-3	
Methyl hydrazine	60-34-	4.43
	4	
Methyl iodide (Iodomethane)	74-88-	2,732
	4	
Methyl isoamyl ketone	110-	6,000
	12-3	
Methyl isobutyl carbinol	108-	6,000
	11-2	
Methyl isobutyl ketone (MIBK; Hexone)	108-	6,000
	10-1	
Methyl isocyanate	624-	11
	83-9	
Methyl methacrylate	80-62-	6,000
	6	
N-Methyl-N'-nitro-N-nitrosoguanidine	70-25-	0.37
(MNNG)	7	
Methyl parathion	298-	47.1
	00-0	
α -Methyl styrene	98-83-	6,000
	9	
Methyl tert-butyl ether (MTBE)	1634-	6,000
	04-4	
Metribuzin	21087-	1,176
	64-9	
Mevinphos (Phosdrin)	7786-	21.2
	34-7	
Mirex	2385-	0.174
	85-5	
Molybdenum, as Mo, metal and	7439- ²	2,353
insoluble compounds	98-7	
Molybdenum, as Mo, soluble compounds	7439- ²	1,176
	98-7	
Monocrotophos	6923-	58.8

	22-4	
Morpholine	110-91-8	6,000
Mustard gas	505-60-2	1.22
Myleran (1,4-Butanediol dimethanesulphonate; busulphan)	55-98-1	1.22
Naled	300-76-5	706
Naphthalene	91-20-3	6,000
2-Naphthylamine	91-59-8	1.22
Nickel and compounds, as Ni	7440-02-0 ²	3.42
Nickel carbonyl, as Ni	13463-39-3	3.42
Nickel subsulfide, as Ni	12035-72-2	1.85
Nitric acid	7697-37-2	1,213
Nitrilotriacetic acid	139-13-9	592
p-Nitroaniline	100-01-6	706
Nitrobenzene	98-95-3	1,185
4-Nitrobiphenyl	92-93-3	6,000
p-Nitrochlorobenzene	100-00-5	152
Nitroethane	79-24-3	6,000
Nitrogen mustards (2,2'-Dichloro-N-methyldiethylamine)	51-75-2	1.22
³ Nitrogen oxides		² 10,000
Nitromethane	75-52-5	6,000
4-Nitrophenol	100-02-7	6,000
1-Nitropropane	108-03-2	6,000
2-Nitropropane	79-46-9	1.22
1-Nitropyrene	5522-43-0	8.08
N-Nitrosodi-n-butylamine	924-16-3	0.555

N-Nitrosodiethanolamine	1116- 54-7	1.11
N-Nitrosodiethylamine	55-18- 5	0.0207
N-Nitrosodimethylamine	62-75- 9	0.0635
N-Nitrosodi-n-propylamine	621- 64-7	0.444
N-Nitroso-N-ethylurea	759- 73-9	0.115
N-Nitroso-N-methylurea	684- 93-5	0.0261
N-Nitrosomethylvinylamine	4549- 40-0	1.22
N-Nitrosomorpholine	59-89- 2	0.468
N'-Nitrosornicotine	16543- 55-8	1.22
N-Nitrosopiperidine	100- 75-4	0.329
N-Nitrosopyrrolidine	930- 55-2	1.46
N-Nitrososarcosine	13256- 22-9	1.22
Nitrotoluene (mixtures and isomers)	88-72- ² 2	2,639
Nitrous oxide	10024- 97-2	6,000
Octachloronaphthalene	2234- 13-1	23.5
Octachlorostyrene	29082- 74-4	10
Octane (all isomers)	111- [*] 65-9 ²	100,000
Oestradiol (Estradiol)	50-28- 2	0.0808
Oxalic acid	144- 62-7	235
P,p'-Oxybis(benzenesulfonyl hydrazide)	80-51- 3	23.5
Paraquat (respirable sizes) (Paraquat chloride)	1910- ² 42-5	23.5
Parathion	56-38- 2	23.5
³ Particulate matter	²	10,000
Pentachlorobenzene	608- 93-5	10
Pentachloronaphthalene	1321-	118

	64-8	
Pentachloronitrobenzene (Quintobenzene; PCNB)	82-68-8	118
Pentachlorophenol (PCP)	87-86-5	118
Pentane, all isomers	78-78- [*] _{4 2}	100,000
Pentyl Acetate (mixtures and isomers)	628- ² ₆₃₋₇	6,000
3 Perchloroethylene (Tetrachloroethylene)	127- 18-4	151
Perchloromethyl mercaptan	594- 42-3	179
Perfluoroisobutylene	382- 21-8	26.7
Persulfates (Ammonium, Potassium, Sodium)	7727- ² 54-0	23.5
Perylene	198- 55-0	10
Phenazopyridine and phenazopyridine hydrochloride	136- ² 40-3	18.1
Phenol	108- 95-2	4,528
Phenolphthalein	77-09- 8	1.22
Phenothiazine	92-84- 2	1,176
Phenylenediamine (mixtures and isomers)	106- ² 50-3	23.5
Phenyl ether vapor	101- 84-8	1,638
Phenyl glycidyl ether (PGE)	122- 60-1	145
Phenylhydrazine	100- 63-0	104
Phenyl mercaptan	108- 98-5	530
Phenytoin and sodium salt of phenytoin	57-41- ² 0	1.22
Phorate	298- 02-2	11.8
Phosgene	75-44- 5	95.2
3 Phosphine	7803- 51-2	98.2
Phosphoric acid	7664- 38-2	235
Phosphorus (yellow)	7723-	23.8

	14-0	
Phosphorus oxychloride	10025-87-3	148
3 Phosphorus pentachloride	10026-13-8	200
Phosphorus pentasulfide	1314-80-3	235
3 Phosphorus trichloride	7719-12-2	264
Phthalic anhydride	85-44-9	1,425
Picric acid	88-89-1	23.5
Pindone	83-26-1	23.5
Platinum (metal)	7440-06-4	235
Platinum, soluble salts, as Pt	7440-06-4	0.471
PM10		10,000
Polybrominated biphenyls (PBBs; Bromodiphenyls)	59536-65-1	0.103
Polychlorinated biphenyls (PCBs; Chlorodiphenyls; Arochlor)	1336-36-3	0.05
Polycyclic organic matter (POM)		2
Potassium hydroxide	1310-58-3	654
Procarbazine and procarbazine hydrochloride	366-70-1	0.222
1,3-Propane sultone	1120-71-4	1.29
Propargyl alcohol	107-19-7	539
β -Propiolactone	57-57-8	0.222
Propionaldehyde	123-38-6	6,000
Propionic acid	79-09-4	6,000
Propoxur (Baygon)	114-26-1	118
Propylene dichloride (1,2-Dichloropropane)	78-87-5	355
Propylene glycol monomethyl ether (PGME)	107-98-2	6,000
Propylene oxide	75-56-9	240
Propylenimine (2-Methyl aziridine;	75-55-	1.22

propylene imine)	8	
Propylthiouracil	51-52-5	3.06
Pyrethrum	8003-34-7	1,176
Pyridine	110-86-1	3,373
Quinoline	91-22-5	6,000
Quinone	106-51-4	104
Resorcinol	108-46-3	6,000
Rhodium (metal) and insoluble compounds, as Rh	7440-16-6 ²	235
Rhodium, soluble compounds, as Rh	7440-16-6 ²	2.35
Rotenone (commercial)	83-79-4	1,176
Safrole	94-59-7	14.1
Selenium and compounds, as Se	7782-49-2 ²	47.1
3 Silicon tetrahydride (Silane)	7803-62-5	1,545
Sodium Azide, as sodium azide or hydrazoic acid vapor	26628-22-8	95.7
Sodium bisulfite	7631-90-5	1,176
Sodium fluoroacetate	62-74-8	11.8
Sodium hydroxide	1310-73-2	654
Sodium metabisulfite	7681-57-4	1,176
3 Stibine (Antimony hydride)	7803-52-3	120
Stoddard solvent (Mineral spirits)	8052-41-3	6,000
Streptozotocin	18883-66-4	0.0287
Strong inorganic acid mists containing sulfuric acid (>35% by weight)	7664-93-9 ²	1.22
Strychnine	57-24-9	35.3
Styrene oxide	96-09-3	6,000

Styrene, monomer	100- 42-5	6,000
Sulfometuron methyl	74222- 97-2	1,176
Sulfotep (TEDP)	3689- 24-5	47.1
3 Sulfur dioxide	7446- 09-5	10,000
Sulfur monochloride	10025- 67-9	1,806
3 Sulfur tetrafluoride	7783- 60-0	145
Sulfuric acid	7664- 93-9	235
3 Sulfuryl fluoride	2699- 79-8	4,911
Sulprofos	35400- 43-2	235
Talc, containing no asbestos fibers	14807- 96-6	471
Tantalum, metal and oxide dusts, as Ta	7440- 25-7	1,176
Tellurium and compounds, except hydrogen telluride, as Te	13494- ² 80-9	23.5
TEPP	107- 49-3	11.8
Terphenyls	26140- ² 60-3	1,635
1,2,3,4-Tetrachlorobenzene	634- 66-2	10
1,2,4,5-Tetrachlorobenzene	95-94- 3	10
2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin; 2,3,7,8-TCDD), as dioxin equivalents	1746- ² 01-6	0.00005
1,1,2,2-Tetrachloroethane	79-34- 5	1,615
Tetrachloronaphthalene	1335- 88-2	471
1,1,1,2-Tetrafluoroethane	811- 97-2	6,000
Tetrafluoroethylene	116- 14-3	1.22
Tetrahydrofuran	109- 99-9	6,000
Tetranitromethane	509- 14-8	1.22
Thallium, elemental and soluble	7440- ²	23.5

compounds, as Tl	28-0	
3 Thionyl chloride	7719- 09-7	1,592
Thiourea	62-56- 6	42.3
Thiram	137- 26-8	235
Tin organic compounds, as Sn	7440- ² 31-5	23.5
Tin, metal, oxides and inorganic compounds, except tin hydride, as Sn	7440- ² 31-5	471
Titanium tetrachloride	7550- 45-0	6,000
Toluene (Toluol)	108- 88-3	6,000
2,4-/2,6-Toluene diisocyanate (mixtures and isomers) (TDI)	584- ² 84-9	6.22
m- and p-Toluidine	108- 44-1	2,062
o-Toluidine and o-toluidine hydrochloride and mixed isomers	95-53- ² 4	17.4
3 Total reduced sulfur and reduced sulfur compounds	²	10,000
Tributyl phosphate	126- 73-8	513
Tributyl tin	56-35- 9	10
1,2,4-Trichlorobenzene	120- 82-1	6,000
1,1,2-Trichloroethane	79-00- 5	6,000
Trichloroethylene (Trichloroethene)	79-01- 6	444
Trichloronaphthalene	1321- 65-9	1,176
2,4,5-Trichlorophenol	95-95- 4	6,000
2,4,6-Trichlorophenol	88-06- 2	287
1,2,3-Trichloropropane	96-18- 4	1.22
Triethanolamine	102- 71-6	1,176
Triethylamine	121- 44-8	974
Trifluralin	1582- 09-8	6,000
1,3,5-Triglycidyl-s-triazinetriene	2451-	11.8

	62-9	
Trimellitic anhydride	552-30-7	13.1
Trimethyl benzene (mixtures and isomers)	25551-2-13-7	6,000
Trimethylamine	75-50-3	2,844
2,2,4-Trimethylpentane	540-84-1	6,000
2,4,6-Trinitrotoluene (TNT)	118-96-7	23.5
Triorthocresyl phosphate	78-30-8	23.5
Triphenyl phosphate	115-86-6	706
Tris(1-aziridinyl)phosphine sulfide (Thiotepa)	52-24-4	0.261
Tris(2,3-dibromopropyl phosphate)	126-72-7	1.35
Tungsten, as W, metal and insoluble compounds	7440-2-33-7	1,176
Tungsten, as W, soluble compounds	7440-2-33-7	235
Uranium (natural), soluble and insoluble compounds, as U	7440-2-61-1	47.1
Urethane (Ethyl carbamate)	51-79-6	3.06
n-Valeraldehyde	110-62-3	6,000
Vanadium pentoxide, as V2O5, respirable dust and fume	1314-62-1	11.8
Vinyl acetate	108-05-4	6,000
Vinyl bromide	593-60-2	515
Vinyl chloride	75-01-4	101
Vinyl cyclohexene dioxide (4-vinyl-1-cyclohexene diepoxide)	106-87-6	1.22
4-Vinyl cyclohexene	100-40-3	104
Vinyl fluoride	75-02-5	443
Vinylidene chloride (1,1-Dichloroethylene)	75-35-4	4,665
Vinylidene fluoride	75-38-7	100,000
Vinyl toluene	25013-	6,000

	15-4	
3, Volatile organic compounds (Reactive 6 organic gases)	2	6,000
Warfarin	81-81-	23.5
	2	
Xylene (mixtures and isomers) (Xylol; Dimethyl Benzene)	1330-2 20-7	6,000
m-Xylene- α, α' -diamine	1477-	32.7
	55-0	
Xylidine (mixtures and isomers)	1300-2	583
	73-8	
Yttrium metal and compounds, as Y	7440-2	235
	65-5	
Zeolites (Erionite)	66733-	1.22
	21-9	
Zirconium and compounds, as Zr	7440-2	1,176
	67-7	

³Indicates contaminants for which a fee will be assessed under s. NR 410.04. Emissions of all compounds listed in s. NR 400.02(162)(b) shall be included when determining fees for volatile organic compounds.

⁴Indicates compounds included in the glycol ethers group. These In addition to being reported individually when a compound's emissions are above the reporting level, the emissions of these compounds are included in the glycol ethers emission total reported along with emissions of the many other such compounds not listed individually by name.

⁵Glycol ethers include mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol, R-(OCH₂CH₂)_n-OR' where:

n = 1, 2 or 3

R = alkyl C7 or less or

R = phenyl or alkyl substituted phenyl

R' = H or alkyl C7 or less or OR' consists of carboxylic acid ester, sulfate, phosphate, nitrate or sulfonate.

⁶Organic Compounds that are not ~~volatile organic~~ compounds because of negligible photochemical reactivity VOC and should not be considered or included here are specified in s. NR 400.02 (162)(a). Emissions of organic compounds specified in s. NR 400.02(162)(b) shall be considered to determine if the reporting level for VOC is exceeded. Emissions of these compounds, however, shall be reported separately as the individual compound if the reporting level for VOC is exceeded.

SECTION 16. NR 438.03 Table 1 footnote 7 is created to read:

NR 438.03 Table 1 footnote 7 ⁷Any amount of emissions of this compound shall be reported if the reporting level for VOC emissions is exceeded. See footnote 6 for how to determine if the reporting level for VOC emissions is exceeded.

SECTION 17. NR 445.06(2)(a)5. is amended to read:

NR 445.06(2)(a)5. Table ~~2~~ 1 of s. NR 438.03.

SECTION 18. EFFECTIVE DATE. This rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 19. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on August 17, 2005.

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By _____
Scott Hassett, Secretary

(SEAL)