SUMMARY of STANDARDS and GUIDELINES
to support Ontario Regulation 419: Air Pollution – Local Air Quality
(including Schedule 6 of O. Reg. 419 on UPPER RISK THRESHOLDS)

(Sorted by Chemical Name)

STANDARDS DEVELOPMENT BRANCH
ONTARIO MINISTRY of the ENVIRONMENT

February 2008

PIBS # 6569e

Ontario Regulation 419: Air Pollution – Local Air Quality (O. Reg. 419) under the *Environmental Protection Act* is the primary regulatory tool for assessing industrial air emissions. O. Reg. 419 contains air standards for contaminants that are intended to protect local air quality and are legal requirements which emitters in Ontario must meet.

This document lists the air standards that are found in Schedule 1, 2 and 3 of O. Reg. 419. In addition, it lists the current Ministry of the Environment (MOE) guidelines for various contaminants. It also includes the Upper Risk Thresholds identified in Schedule 6 of O. Reg. 419.

Most of the standards and guidelines identified in this document are based on the Ambient Air Quality Criteria (AAQCs) developed via the MOE's standard setting process. AAQCs are effect-based concentration levels in air with variable averaging times (e.g., 24 hour, 1 hour and 10 minutes) appropriate for the effect. The effects considered may be based on health, odour, vegetation, soiling, visibility, corrosion or other effects. If there are multiple AAQCs based on different effects, generally, the more stringent half-hour value, derived from the AAQCs of variable averaging times, is selected to develop the half-hour average standards (i.e., those in Schedule 1 and 2) and also the half-hour guidelines in this list.

One of the main differences between this current list, and previously released lists of air standards and guidelines, is the removal of the reference to AAQCs. Since the AAQCs are most commonly used in environmental assessments, general air quality assessments, and special studies using ambient air monitoring data, the MOE has decided to publish them in a separate list to distinguish the AAQCs from the O. Reg. 419 standards (see *Ontario Ambient Air Quality Criteria* (PIBS# 6570e)). Hence, this document would be used primarily by an emitter who is required to develop an Emission Summary Dispersion Modelling (ESDM) report under O. Reg. 419. The ESDM report may be developed when obtaining a Certificate of Approval (CofA) or in the context of various other requirements of O. Reg. 419. For more information on the ESDM reports, please refer to the most recent version of the MOE Guideline *Procedure for Preparing an Emission Summary and Dispersion Modelling Report* (PIBS# 3614e02).

O. Reg. 419 identifies the phase-in dates for Schedule 2 and 3 standards which are different depending on type of facility and its class identified by a North American Industrial Classification System (NAICS) code listed in Schedule 4 or 5 of O. Reg. 419.

- The standards listed in Schedule 1 of O. Reg. 419 apply to all emitters (unless the emitter has voluntarily 'sped up' to the Schedule 3 standard or has been issued an Alternative Standard under section 32 between November 30, 2005 and February 1, 2010.
- On February 1, 2010, Schedule 2 will apply to all sectors except for facilities belonging to the sectors listed in Schedule 4.
- Schedule 4 emitters will be phased into the Schedule 3 standards as of February 1, 2010.

- Emitters in the sectors identified in Schedule 5 of O. Reg. 419, will be phased into the Schedule 3 standards on February 1, 2013.
- All emitters in all sectors will be phased into the Schedule 3 standards as of February 1, 2020.
- For new facilities that are in Schedule 4 or 5 only Schedule 3 standards should be applied.

It should be noted that Schedule 3 standards require the use of the newer air dispersion models to assess compliance. It is also important to note that after February 1, 2010, the Ministry may issue an Order under section 20(5) to require a facility to 'speed up' to the Schedule 3 standard before its phase-in date contained in the regulation. Please refer to O. Reg. 419 for a complete reference to the phase in timing and requirements.

This document also lists guidelines for some contaminants for which there are no standards in Schedules 1, 2 and/or 3 of O. Reg. 419. Exceedence of a guideline may cause adverse effects and as such could trigger the issuance of a Director's Notice as well as a requirement to notify the MOE under section 28 of O. Reg. 419. Hence, applicants for Certificates of Approval under section 9 of the *Environmental Protection Act* are required to demonstrate conformance with the appropriate guidelines for the contaminants that are the subject of the application.

If there are multiple standards in Schedule 3 or multiple guidelines (when Section 20 applies) for a particular contaminant, all of them must be used for assessment purposes, since each represents a different type of effect linked to a particular averaging period.

If a contaminant is not listed in this document, there may still be concerns regarding its potential to cause adverse effects. For more information on how to consider contaminants with no MOE limits, emitters should refer to *Procedure for Preparing an Emission Summary and Dispersion Modelling Report* (PIBS# 3614e02) and the *Jurisdictional Screening Level (JSL) List. A Screening Tool for Ontario Regulation 419: Air Pollution – Local Air Quality* (PIBS # 6547e).

Organization of the document

This Summary is comprised of (i) a table listing O. Reg. 419 standards and the current MOE guidelines with the limiting effects identified in brackets beside the respective limit, and O. Reg. 419 upper risk thresholds and (ii) explanatory footnotes and definitions of terms and symbols. The table is divided into four main sections:

- The far left-hand section of the table includes:
  i) A simple number counter;
  ii) The Chemical Abstract Services number (CAS No.), which is the numerical identifier assigned by Chemical Abstracts Service;
  iii) The contaminant name listed in alphabetical order.

  (Note: Another list, containing the same information, but sorted according to CAS numbers is also available on the MOE's website).

- The next section of the table contains Schedules 1, 2 and 3 of O. Reg. 419 and lists the air standards along with the appropriate phase-in dates as specified in O. Reg. 419. The middle section also refers to footnotes that explain the phase-in of Schedules 1, 2 and 3 of O. Reg. 419:
  i) Schedule 1 – contains the half-hour air standards;
  ii) Schedule 2 – is similar to Schedule 1 but contains updated and/or new half-hour air standards for some contaminants; and
  iii) Schedule 3 – contains air standards with various appropriate averaging times.

- The next section of the table contains the MOE guidelines for various averaging periods.

- The far right-hand section of the table contains the URTs from Schedule 6 of O. Reg. 419. Upper Risk Thresholds are NOT standards. URTs are concentrations, which if exceeded anywhere off property, require timely actions (e.g. immediate notification to the MOE in writing, and submission of the ESDM report within 3 months). For more information, please refer to section 30 of the O. Reg. 419 and to Chapter 3 of the *Guideline for the Implementation of Air Standards in Ontario (GIASO)* (PIBS # 5166e).

Disclaimer

While this document summarizes certain requirements of O. Reg. 419, the regulation should be referred to for a full account of the regulatory requirements related to local air quality. Any conflict between this document and O. Reg. 419 will be resolved in favour of O. Reg. 419.

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February 2008

№	CAS No.	Contaminant Name	Phase In/Out Dates for Contaminants with New and/or Updated Standards	Ontario Regulation 419 Standards [1, 2]				Guidelines [1, 2]			O. Reg. 419 Schedule 6 Upper Risk Thresholds (URT) [4]	
				Schedule 1 Standard with Half Hour Averaging Time (µg/m³)	Schedule 2 Standard with Half Hour Averaging Time (µg/m³)	Schedule 3 Standards with Variable Averaging Times [3]		½ Hour Guideline (µg/m³) (When Sections 18, 19 Apply)	24 Hour Guideline (µg/m³) [3] (When Section 20 Applies)	Other Time Period Guideline (µg/m³; time period) [3, 3a] (When Section 20 Applies)	½ Hour URT (µg/m³)	24 Hour URT (µg/m³)
						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
1	75-07-0	Acetaldehyde	-	500 (Health)	500 (Health)	500 (Health)	500 (Health); ½ hour	-	-	-	5,000	5,000
2	64-19-7	Acetic acid	-	2,500 (Odour)	2,500 (Odour)	-	-	-	TBU - 2,500 (Odour) [5]	-	-	-
3	67-64-1	Acetone	Until Feb. 1, 2010	48,000 (Odour)	-	-	-	-	-	-	118,800	118,800
			After Feb. 1, 2010	-	35,640 (Health)	11,880 (Health)	-	-	-	-	118,800	118,800
4	75-05-8	Acetonitrile	Until Feb. 1, 2010	See note #6	-	-	-	-	-	-	2,100	700
			After Feb. 1, 2010	-	210 (Health)	70 (Health)	-	-	-	-	2,100	700
5	98-86-2	Acetophenone	-	-	-	-	-	625 (Odour)	-	1,167 (Health); 1 hour 850 (Odour); 10 minute	-	-
6	74-86-2	Acetylene	-	56,000 (Odour)	56,000 (Odour)	-	-	-	TBU - 56,000 (Odour) [5]	-	-	-
7	107-02-8	Acrolein	Until Feb. 1, 2010	-	-	-	-	See note #7	-	-	2.4	0.8
			After Feb. 1, 2010	-	0.24 (Health)	0.08 (Health)	0.24 (Health); ½ hour	-	-	-	2.4	0.8
8	79-06-1	Acrylamide	-	45 (Health)	45 (Health)	15 (Health)	-	-	-	-	-	-
9	107-13-1	Acrylonitrile	Until Feb. 1, 2010	180 - see note #1a	-	-	-	-	-	-	180	60
			After Feb. 1, 2010	-	1.8 (Health)	0.6 (Health)	-	-	-	-	180	60
10	124-04-9	Adipic acid	-	-	-	-	-	3,500 (Health)	1,167 (Health)	-	-	-
11	N/A	Alkyltoluene sulphonamide, N-	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
12	106-92-3	Allyl glycidyl ether	-	-	-	-	-	180 (Health)	60 (Health)	-	-	-
13	300-92-5	Aluminum distearate	-	-	-	-	-	100 (Particulate)	2,180 (Health)	-	-	-
14	1344-28-1	Aluminum oxide	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
15	7047-84-9	Aluminum stearate	-	-	-	-	-	100 (Particulate)	2,180 (Health)	-	-	-
16	637-12-7	Aluminum tristearate	-	-	-	-	-	100 (Particulate)	2,180 (Health)	-	-	-
17	7664-41-7	Ammonia	Until Feb. 1, 2010	3,600 - see note #1a	-	-	-	-	-	-	3,600	1,000
			After Feb. 1, 2010	-	300 (Health)	100 (Health)	-	-	-	-	3,600	1,000
18	12125-02-9	Ammonium chloride	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
19	123-92-2	Amyl acetate, iso-	-	-	-	-	-	See note #6a	53,200 (Health & Odour)	-	-	-
20	628-63-7	Amyl acetate, n-	-	-	-	-	-	See note #6a	53,200 (Health & Odour)	-	-	-
21	626-38-0	Amyl acetate, secondary	-	-	-	-	-	See note #6a	66,500 (Health & Odour)	-	-	-
22	7440-36-0	Antimony	-	75 (Health)	75 (Health)	25 (Health)	-	-	-	-	-	-
23	7440-38-2	Arsenic and compounds	-	-	-	-	-	1 (Health)	0.3 (Health)	-	-	-
24	7784-42-1	Arsine	-	10 (Health)	10 (Health)	5 (Health)	10 (Health); ½ hour	-	-	-	-	-
25	1332-21-4	Asbestos (fibres > 5µm in length)	-	-	-	-	-	See note #6a	0.04 fibres/cm^3 (Health)	-	-	-
26	1332-21-4	Asbestos (total)	-	-	-	-	-	5 (Health)	-	-	-	-
27	7440-39-3	Barium - total water soluble	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-

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				Schedule 1 Standard with Half Hour Averaging Time (µg/m³)	Schedule 2 Standard with Half Hour Averaging Time (µg/m³)	Schedule 3 Standards with Variable Averaging Times [3]		½ Hour Guideline (µg/m³) (When Sections 18, 19 Apply)	24 Hour Guideline (µg/m³) [3] (When Section 20 Applies)	Other Time Period Guideline (µg/m³; time period) [3, 3a] (When Section 20 Applies)	½ Hour URT (µg/m³)	24 Hour URT (µg/m³)
						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
28	71-43-2	Benzene	-	-	-	-	-	CARC	CARC	-	-	-
29	50-32-8	Benzo(a)pyrene - single facility	-	-	-	-	-	0.0033 (Health)	0.0011 (Health)	-	-	-
30	65-85-0	Benzoic acid	-	-	-	-	-	2,100 (Health)	700 (Health)	-	-	-
31	95-16-9	Benzothiazole	-	-	-	-	-	200 (Health)	70 (Health)	-	-	-
32	98-88-4	Benzoyl chloride	-	-	-	-	-	350 (Health)	125 (Corrosion & Health)	-	-	-
33	100-51-6	Benzyl alcohol	-	-	-	-	-	2,640 (Health)	880 (Health)	-	-	-
34	7440-41-7	Beryllium and compounds	-	0.03 (Health)	0.03 (Health)	0.01 (Health)	-	-	-	-	-	-
35	92-52-4	Biphenyl	-	-	-	-	-	60 (Odour)	-	60 (Odour); 1 hour	-	-
36	1303-96-4	Borax	-	-	-	-	-	100 (Health)	33 (Health)	-	-	-
37	10043-35-3	Boric acid	-	-	-	-	-	100 (Health)	33 (Health)	-	-	-
38	7440-42-8	Boron	-	100 (Particulate)	100 (Particulate)	120 (Particulate)	-	-	-	-	-	-
39	10294-33-4	Boron tribromide	-	100 (Corrosion)	100 (Corrosion)	35 (Corrosion)	-	-	-	-	-	-
40	10294-34-5	Boron trichloride	-	100 (Corrosion)	100 (Corrosion)	35 (Corrosion)	-	-	-	-	-	-
41	7637-07-2	Boron trifluoride	-	5 (Vegetation)	5 (Vegetation)	2 (Vegetation)	-	-	-	-	-	-
42	314-40-9	Bromacil	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
43	7726-95-6	Bromine	-	70 (Health)	70 (Health)	20 (Health)	-	-	-	-	-	-
44	75-25-2	Bromoform	-	-	-	-	-	165 (Health)	55 (Health)	-	-	-
45	71-36-3	Butanol, n-	Until Feb. 1, 2013	-	-	-	-	2,278 (Odour)	-	-	18,000	6,000
			After Feb. 1, 2013	-	2,760 (Health)	920 (Health)	-	1,540 (Odour)	-	2,100 (Odour); 10 minute	18,000	6,000
46	75-65-0	Butanol, tertiary	-	-	-	-	-	See note #6a	30,300 (Health)	-	-	-
47	5131-66-8	Butoxy-2-propanol, 1-	-	-	-	-	-	9,900 (Health)	3,300 (Health)	-	-	-
48	123-86-4	Butyl acetate, n-	-	-	-	-	-	735 (Odour)	-	15,000 (Health); 1 hour 1,000 (Odour) 10 minute	-	-
49	141-32-2	Butyl acrylate	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
50	85-68-7	Butyl benzene phthalate	-	-	-	-	-	450 (Health)	150 (Health)	-	-	-
51	3622-84-2	Butyl benzene sulphonamide, N-	-	-	-	-	-	105 (Health)	35 (Health)	-	-	-
52	123-95-5	Butyl stearate	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
53	7440-43-9	Cadmium (and Cadmium Compounds)	Until Feb. 1, 2013	See note #7	See note #7	See note #7	-	-	-	-	0.75	0.25
			After Feb. 1, 2013	-	0.075 (Health)	0.025 (Health)	-	-	-	-	0.75	0.25
54	75-20-7	Calcium carbide	-	-	-	-	-	20 (Corrosion)	10 (Corrosion)	-	-	-
55	592-01-8	Calcium cyanide (as total salt)	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
56	1305-62-0	Calcium hydroxide	-	27 (Corrosion)	27 (Corrosion)	13.5 (Corrosion)	-	-	-	-	-	-
57	1305-78-8	Calcium oxide	-	20 (Corrosion)	20 (Corrosion)	10 (Corrosion)	-	-	-	-	-	-
58	1592-23-0	Calcium stearate	-	-	-	-	-	100 (Particulate)	35 (Health)	-	-	-
59	133-06-2	Captan	-	-	-	-	-	75 (Health)	25 (Health)	-	-	-
60	1333-86-4	Carbon black	-	25 (Soiling)	25 (Soiling)	10 (Soiling)	-	-	-	-	-	-
61	75-15-0	Carbon disulphide	-	330 (Odour)	330 (Odour)	-	-	-	TBU - 330 (Odour) [5]	-	-	-

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						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
62	630-08-0	Carbon monoxide (single source) - see note #8	-	6,000 (Health)	6,000 (Health)	-	6,000 (Health); ½ hour	-	-	-	-	-
63	56-23-5	Carbon tetrachloride	-	7.2 (Health)	7.2 (Health)	2.4 (Health)	-	-	-	-	72	24
64	133-90-4	Chloramben	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
65	57-74-9	Chlordane	-	-	-	-	-	15 (Health)	5 (Health)	-	-	-
66	N/A	Chlorinated dibenzo-p-dioxins (CDDs) see note #9	-	-	-	-	-	15 pg TEQ/m³ (Health)	5 pg TEQ/m³ (Health)	-	-	-
67	7782-50-5	Chlorine	Until Feb. 1, 2010	300 - see note #1a	-	-	-	-	-	230 (Odour); 10 minute	300	100
			After Feb. 1, 2010	-	30 (Health)	10 (Health)	-	-	-	230 (Odour); 10 minute	300	100
68	10049-04-4	Chlorine dioxide	Until Feb. 1, 2013	See note #7	See note #7	See note #7	-	-	-	-	60	20
			After Feb. 1, 2013	-	6 (Health)	2 (Health)	-	-	-	-	60	20
69	75-45-6	Chlorodifluoromethane (Freon 22) - see note #10	-	-	-	-	-	1,050,000 (Health) [10]	350,000 (Health) [10]	-	-	-
70	75-00-3	Chloroethane	Until Feb. 1, 2013	See note #6	-	-	-	-	-	-	75,000	25,000
			After Feb. 1, 2013	-	16,800 (Health)	5,600 (Health)	-	-	-	-	75,000	25,000
71	67-66-3	Chloroform	Until Feb. 1, 2010	300 - see note #1a	-	-	-	-	-	-	300	100
			After Feb. 1, 2010	-	3 (Health)	1 (Health)	-	-	-	-	300	100
72	7440-47-3	Chromium, di- and trivalent forms - see note #11	-	-	-	-	-	5 (Health)	1.5 (Health)	-	-	-
73	77-92-9	Citric acid	-	-	-	-	-	100 (Particulate)	120 (Particulate)	300 (Health); 1 hour	-	-
74	8007-45-2	Coal tar pitch volatiles - soluble fraction	-	-	-	-	-	3 (Health)	1 (Health)	-	-	-
75	7440-48-4	Cobalt	-	-	-	-	-	0.3 (Health)	0.1 (Health)	-	-	-
76	7440-50-8	Copper	-	100 (Health)	100 (Health)	50 (Health)	-	-	-	-	-	-
77	1319-77-3	Cresols	-	230 (Health)	230 (Health)	75 (Health)	-	-	-	-	-	-
78	506-77-4	Cyanogen chloride	-	-	-	-	-	15 (Health)	12 (Health)	-	-	-
79	110-82-7	Cyclohexane	Until Feb. 1, 2010	-	-	-	-	See note #7	-	-	183,000	61,000
			After Feb. 1, 2010	-	18,300 (Health)	6,100 (Health)	-	-	-	-	183,000	61,000
80	127-20-8	Dalapon sodium salt	-	-	-	-	-	100 (Health)	50 (Health)	-	-	-
81	17702-41-9	Decaborane	-	50 (Health)	50 (Health)	25 (Health)	-	-	-	-	-	-
82	124-18-5	Decane, n-	-	-	-	-	-	See note #6a	-	60,000 (Health & Odour); 1 hour	-	-
83	872-05-9	Decene, 1-	-	-	-	-	-	180,000 (Health)	60,000 (Health)	-	-	-
84	1395-21-7	Detergent enzyme (Subtilisin)	-	-	-	-	-	0.2 (Health)	0.06 (Health)	-	-	-
85	117-81-7	Di(2-ethylhexyl) phthalate	-	100 (Health & Particulate)	100 (Health & Particulate)	50 (Health)	-	-	-	-	1,500	500
86	123-42-2	Diacetone alcohol	-	-	-	-	-	990 (Odour)	-	1,350 (Odour); 10 minute	-	-
87	333-41-5	Diazinon	-	-	-	-	-	9 (Health)	3 (Health)	-	-	-
88	19287-45-7	Diborane	-	20 (Health)	20 (Health)	10 (Health)	-	-	-	-	-	-
89	111-92-2	Dibutyl amine	-	-	-	-	-	See note #6a	-	2,645 (Health); 1 hour	-	-
90	84-74-2	Dibutyl phthalate (DBP, di-n-butyl phthalate)	-	-	-	-	-	100 (Health)	50 (Health)	-	-	-
91	77-58-7	Dibutyltin dilaurate	-	-	-	-	-	100 (Health)	30 (Health)	-	-	-
92	131-15-7	Dicapryl phthalate	-	100 (Particulate)	100 (Particulate)	120 (Particulate)	-	-	-	-	-	-

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						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
93	76-14-2	Dichloro-1,1,2,2-tetrafluoroethane, 1,2- (Freon 114) - see note #10	-	-	-	-	-	2,100,000 (Health) [10]	700,000 (Health) [10]	-	-	-
94	95-50-1	Dichlorobenzene, 1,2-	-	-	-	-	-	37,000 (Health)	-	30,500 (Health); 1 hour	-	-
95	106-46-7	Dichlorobenzene, 1,4-	-	285 (Health)	285 (Health)	95 (Health)	-	-	-	-	2,850	950
96	91-94-1	Dichlorobenzidine, 3,3-	-	-	-	-	-	CARC	CARC	-	-	-
97	75-34-3	Dichloroethane, 1,1-	Until Feb. 1, 2013	-	-	-	-	600 (Health)	-	-	4,950	1,650
			After Feb. 1, 2013	-	495 (Health)	165 (Health)	-	-	-	-	4,950	1,650
98	156-59-2	Dichloroethylene, cis-1,2-	-	-	-	-	-	315 (Health)	105 (Health)	-	-	-
99	540-59-0	Dichloroethylene, sym-1,2-	-	-	-	-	-	315 (Health)	105 (Health)	-	-	-
100	156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	315 (Health)	105 (Health)	-	-	-
101	109-89-7	Diethyl amine	-	-	-	-	-	See note #6a	-	2,910 (Health); 1 hour	-	-
102	84-66-2	Diethyl phthalate (DEP)	-	-	-	-	-	100 (Health)	125 (Health)	-	-	-
103	112-34-5	Diethylene glycol monobutyl ether	-	-	-	-	-	See note #6a	65 (Health)	-	-	-
104	124-17-4	Diethylene glycol monobutyl ether acetate	-	-	-	-	-	See note #6a	85 (Health)	-	-	-
105	111-90-0	Diethylene glycol monoethyl ether	-	-	-	-	-	800 (Odour)	-	1,100 (Odour); 10 minute	-	-
106	112-15-2	Diethylene glycol monoethyl ether acetate	-	-	-	-	-	See note #6a	1,800 (Health)	-	-	-
107	111-77-3	Diethylene glycol monomethyl ether	-	-	-	-	-	800 (Odour)	1,200 (Health)	-	-	-
108	75-71-8	Difluorodichloromethane (Freon 12) - see note #10	-	-	-	-	-	1,500,000 (Health) [10]	500,000 (Health) [10]	-	-	-
109	84-75-3	Dihexyl phthalate (DHP)	-	-	-	-	-	100 (Health)	50 (Health)	-	-	-
110	108-83-8	Diisobutyl ketone	-	-	-	-	-	470 (Odour)	3,500 (Health)	649 (Odour); 10 minute	-	-
111	127-19-5	Dimethyl acetamide, N,N-	-	-	-	-	-	900 (Health)	300 (Health)	-	-	-
112	124-40-3	Dimethyl amine	-	-	-	-	-	See note #6a	-	1,840 (Health & Odour); 1 hour	-	-
113	624-92-0	Dimethyl disulphide - see note #12	Until Feb. 1, 2013	40 (Odour)	40 (Odour)	-	-	-	-	-	-	-
			After Feb. 1, 2013	-	-	-	-	-	-	56 (Odour); 10 minute	-	-
114	115-10-6	Dimethyl ether	-	-	-	-	-	2,100 (Odour)	TBU - 2,100 (Odour) [5]	-	-	-
115	756-79-6	Dimethyl methylphosphonate	-	-	-	-	-	See note #6a	875 (Health)	-	-	-
116	131-11-3	Dimethyl phthalate (DMP)	-	-	-	-	-	100 (Health)	125 (Health)	-	-	-
117	67-68-5	Dimethyl sulfoxide	-	-	-	-	-	6,300 (Health)	2,100 (Health)	-	-	-
118	75-18-3	Dimethyl sulphide - see note #12	Until Feb. 1, 2013	30 (Odour)	30 (Odour)	-	-	-	-	-	-	-
			After Feb. 1, 2013	-	-	-	-	-	-	30 (Odour); 10 minute	-	-
119	109-55-7	Dimethyl-1,3-diamino propane, N,N-	-	-	-	-	-	60 (Health)	20 (Health)	-	-	-
120	117-84-0	Di-n-octyl phthalate	-	100 (Health & Particulate)	100 (Health & Particulate)	120 (Health & Particulate)	-	-	-	-	-	-
121	123-91-1	Dioxane	-	-	-	-	-	See note #6a	3,500 (Health)	-	-	-
122	646-06-0	Dioxolane-1,3	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
123	122-39-4	Diphenylamine	-	-	-	-	-	50 (Health)	17.5 (Health)	-	-	-
124	85-00-7	Diquat dibromide - respirable	-	-	-	-	-	0.096 (Health)	0.032 (Health)	-	-	-
125	85-00-7	Diquat dibromide - total	-	-	-	-	-	0.48 (Health)	0.16 (Health)	-	-	-

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				Schedule 1 Standard with Half Hour Averaging Time (µg/m³)	Schedule 2 Standard with Half Hour Averaging Time (µg/m³)	Schedule 3 Standards with Variable Averaging Times [3]		½ Hour Guideline (µg/m³) (When Sections 18, 19 Apply)	24 Hour Guideline (µg/m³) [3] (When Section 20 Applies)	Other Time Period Guideline (µg/m³; time period) [3, 3a] (When Section 20 Applies)	½ Hour URT (µg/m³)	24 Hour URT (µg/m³)
						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
126	1886-81-3	Dodecyl benzene sulphonic acid	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
127	2439-10-3	Dodine	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
128	548-73-2	Droperidol	-	-	-	-	-	3 (Health)	1 (Health)	-	-	-
129	N/A	Dustfall	-	8,000 µg/m² (Soiling)	8,000 µg/m² (Soiling)	-	7 g/m² (Soiling); 30-day	-	-	-	-	-
130	64-17-5	Ethanol (Ethyl alcohol)	-	-	-	-	-	19,000 (Odour)	-	TBU - 19,000 (Odour); 1 hour [5]	-	-
131	141-78-6	Ethyl acetate	-	19,000 (Odour)	19,000 (Odour)	-	-	-	-	TBU - 19,000 (Odour); 1 hour [5]	-	-
132	140-88-5	Ethyl acrylate	-	4.5 (Odour)	4.5 (Odour)	-	-	-	-	TBU - 4.5 (Odour); 1 hour [5]	-	-
133	100-41-4	Ethyl benzene	Until Feb. 1, 2010	3,000 - see note #1a	-	-	-	-	-	1,900 (Odour); 10 minute	14,000	10,000
			After Feb. 1, 2010	-	1,400 (Odour)	1,000 (Health)	-	-	-	1,900 (Odour); 10 minute	14,000	10,000
134	60-29-7	Ethyl ether	Until Feb. 1, 2010	7,000 - see note #1a	-	-	-	-	-	950 (Odour); 10 minute	7,000	80,000
			After Feb. 1, 2010	-	700 (Odour)	8,000 (Health)	-	-	-	950 (Odour); 10 minute	7,000	80,000
135	104-76-7	Ethyl hexanol, 2-	-	-	-	-	-	600 (Odour)	-	TBU - 600 (Odour); 1 hour [5]	-	-
136	763-69-9	Ethyl-3-ethoxy propionate	-	-	-	-	-	147 (Odour)	-	200 (Odour); 10 minute	-	-
137	84-51-5	Ethylanthraquinone, 2-	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
138	74-85-1	Ethylene	-	-	-	-	-	See note #6a	40 (Vegetation)	-	-	-
139	106-93-4	Ethylene dibromide	-	-	-	-	-	9 (Health)	3 (Health)	-	-	-
140	107-06-2	Ethylene dichloride	-	6 (Health)	6 (Health)	2 (Health)	-	-	-	-	600	200
141	107-21-1	Ethylene glycol	-	-	-	-	-	See note #6a	12,700 (Health)	-	-	-
142	111-76-2	Ethylene glycol butyl ether (Butyl cellosolve)	-	-	-	-	-	350 (Odour)	2,400 (Health)	500 (Odour); 10 minute	-	-
143	112-07-2	Ethylene glycol butyl ether acetate (Butyl cellosolve acetate)	-	-	-	-	-	500 (Odour)	3,250 (Health)	700 (Odour); 10 minute	-	-
144	628-96-6	Ethylene glycol dinitrate	-	-	-	-	-	10 (Health)	3 (Health)	-	-	-
145	110-80-5	Ethylene glycol ethyl ether (Cellosolve)	-	-	-	-	-	800 (Odour)	380 (Health)	1,100 (Odour); 10 minute	-	-
146	111-15-9	Ethylene glycol ethyl ether acetate (Cellosolve acetate)	-	-	-	-	-	220 (Odour)	540 (Health)	300 (Odour); 10 minute	-	-
147	112-25-4	Ethylene glycol monohexyl ether	-	-	-	-	-	See note #6a	2,500 (Health)	-	-	-
148	75-21-8	Ethylene oxide	Until Feb. 1, 2013	-	-	-	-	15 (Health)	-	-	60	20
			After Feb. 1, 2013	-	0.6 (Health)	0.2 (Health)	-	-	-	-	60	20
149	60-00-4	Ethylenediaminetetra acetic acid	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
150	990-73-8	Fentanyl citrate	-	-	-	-	-	0.06 (Health)	0.02 (Health)	-	-	-
151	1309-37-1	Ferric oxide	-	75 (Soiling)	75 (Soiling)	25 (Soiling)	-	-	-	-	-	-
152	7664-39-3	Fluorides (as HF) - Gaseous (Growing Season)	-	4.3 (Vegetation)	4.3 (Vegetation)	0.86 (Vegetation)	0.34 (Vegetation); 30-day	-	-	-	-	-
		Fluorides (as HF) - Total (Growing Season)	-	8.6 (Vegetation)	8.6 (Vegetation)	1.72 (Vegetation)	0.69 (Vegetation); 30-day	-	-	-	-	-
		Fluorides (as HF) - Total (Non-Growing Season)	-	17.2 (Vegetation)	17.2 (Vegetation)	3.44 (Vegetation)	1.38 (Vegetation); 30-day	-	-	-	-	-
153	N/A	Fluorinert 3M-FC-70	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
154	50-00-0	Formaldehyde	-	65 (Odour/Irritation)	65 (Odour/Irritation)	65 (Health)	-	-	-	-	-	-
155	64-18-6	Formic acid	-	1,500 (Health)	1,500 (Health)	500 (Health)	-	-	-	-	-	-
156	98-01-1	Furfural	-	1,000 (Odour)	1,000 (Odour)	-	-	-	-	TBU - 1,000 (Odour); 1 hour [5]	-	-

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				Schedule 1 Standard with Half Hour Averaging Time (µg/m³)	Schedule 2 Standard with Half Hour Averaging Time (µg/m³)	Schedule 3 Standards with Variable Averaging Times [3]		½ Hour Guideline (µg/m³) (When Sections 18, 19 Apply)	24 Hour Guideline (µg/m³) [3] (When Section 20 Applies)	Other Time Period Guideline (µg/m³; time period) [3, 3a] (When Section 20 Applies)	½ Hour URT (µg/m³)	24 Hour URT (µg/m³)
						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
157	98-00-0	Furfuryl alcohol	-	3,000 (Health)	3,000 (Health)	1,000 (Health)	-	-	-	-	-	-
158	111-30-8	Glutaraldehyde	-	-	-	-	-	42 (Health)	14 (Health)	35 (Health); 1 hour	-	-
159	52-86-8	Haloperidol	-	-	-	-	-	0.3 (Health)	0.1 (Health)	-	-	-
160	4035-89-6	HDI Biuret (HDI-BT)	Until Feb. 1, 2010	-	-	-	-	9 (Health) [13]	-	-	30	30
			After Feb. 1, 2010	-	9 (Health)	3 (Health)	-	-	-	-	30	30
161	3779-63-3	HDI Isocyanurate (HDI IC)	Until Feb. 1, 2010	See note #6	-	-	-	-	-	-	30	30
			After Feb. 1, 2010	-	9 (Health)	3 (Health)	-	-	-	-	30	30
162	28182-81-2	HDI Polyisocyanate (HDI-BT & HDI-IC)	Until Feb. 1, 2010	See note #6	-	-	-	-	-	-	30	30
			After Feb. 1, 2010	-	9 (Health)	3 (Health)	-	-	-	-	30	30
163	142-82-5	Heptane, n-	-	33,000 (Health)	33,000 (Health)	11,000 (Health)	-	-	-	-	-	-
164	77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	6 (Health)	2 (Health)	-	-	-
165	999-97-3	Hexamethyl disilazane	-	-	-	-	-	5 (Health)	2 (Health)	-	-	-
166	822-06-0	Hexamethylene diisocyanate (HDI) monomer	Until Feb. 1, 2010	-	-	-	-	See note #7	-	-	1	0.3
			After Feb. 1, 2010	-	0.1 (Health)	0.03 (Health)	-	-	-	-	1	0.3
167	124-09-4	Hexamethylenediamine	-	-	-	-	-	48 (Health)	16 (Health)	-	-	-
168	111-49-9	Hexamethyleneimine	-	-	-	-	-	945 (Health)	315 (Health)	-	-	-
169	110-54-3	Hexane, n- (n-Hexane and Hexane isomers only)	Until Feb. 1, 2010	-	-	-	-	See note #7	-	-	25,000	25,000
			After Feb. 1, 2010	-	22,500 (Health)	7,500 (Health)	-	-	-	-	25,000	25,000
	110-54-3	Hexane, n- (part of a mixture)	Until Feb. 1, 2010	-	-	-	-	See note #7	-	-	25,000	25,000
			After Feb. 1, 2010	-	7,500 (Health)	2,500 (Health)	-	-	-	-	25,000	25,000
170	107-41-5	Hexylene glycol	-	-	-	-	-	14,400 (Health)	-	12,000 (Health); 1 hour	-	-
171	10035-10-6	Hydrogen bromide	-	-	-	-	-	800 (Health)	-	668 (Health); 1 hour	-	-
172	7647-01-0	Hydrogen chloride	Until Feb. 1, 2010	100 - see note #1a	-	-	-	-	-	-	600	200
			After Feb. 1, 2010	-	60 (Health)	20 (Health)	-	-	-	-	600	200
173	74-90-8	Hydrogen cyanide	Until Feb. 1, 2010	See note #7	-	-	-	-	-	-	240	80
			After Feb. 1, 2010	-	24 (Health)	8 (Health)	-	-	-	-	240	80
174	7722-84-1	Hydrogen peroxide	-	-	-	-	-	90 (Health)	30 (Health)	-	-	-
175	7783-06-4	Hydrogen sulphide - see notes #12, #14	Until Feb. 1, 2013	30 (Odour)	30 (Odour)	-	-	-	-	-	210	70
			After Feb. 1, 2013	-	10 (Health & Odour) [12]	7 (Health) [12]	13 (Odour); 10 minute [14]	-	-	-	210	70
176	15438-31-0	Iron (metallic)	-	10 (Soiling)	10 (Soiling)	4 (Soiling)	-	-	-	-	-	-
177	78-83-1	Isobutanol	Until Feb. 1, 2013	-	-	-	-	1,940 (Odour)	-	-	48,000	16,000
			After Feb. 1, 2013	-	13,800 (Health)	4,600 (Health)	-	1,720 (Odour)	-	2,340 (Odour); 10 minute	48,000	16,000
178	110-19-0	Isobutyl acetate	-	-	-	-	-	1,220 (Odour)	-	1,660 (Odour); 10 minute	-	-
179	67-63-0	Isopropanol (Isopropyl alcohol)	Until Feb. 1, 2010	-	-	-	-	24,000 (Odour)	-	-	220,000	73,000
			After Feb. 1, 2010	-	22,000 (Health)	7,300 (Health)	-	-	-	-	220,000	73,000
180	108-21-4	Isopropyl acetate	-	-	-	-	-	1,470 (Odour)	-	2,000 (Odour); 10 minute	-	-

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						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
181	98-82-8	Isopropyl benzene	-	100 (Odour)	100 (Odour)	400 (Health)	-	-	-	-	-	-
182	108-20-3	Isopropyl ether	-	-	-	-	-	220 (Odour)	110,000 (Health)	-	-	-
183	7439-92-1	Lead (and Lead compounds)	Until Feb. 1, 2010	6 (Health)	6 (Health)	2 (Health)	0.7 (Health); 30 day +	-	-	-	6	2
			After Feb. 1, 2010	-	1.5 (Health)	0.5 (Health)	0.2 (Health); 30 day +	-	-	-	6	2
184	58-89-9	Lindane (Hexachlorocyclohexane)	-	-	-	-	-	15 (Health)	5 (Health)	-	-	-
185	7580-67-8	Lithium hydrides	-	7.5 (Health)	7.5 (Health)	2.5 (Health)	-	-	-	-	-	-
186	7439-93-2	Lithium (other than hydrides)	-	60 (Health)	60 (Health)	20 (Health)	-	-	-	-	-	-
187	1309-48-4	Magnesium oxide	-	100 (Particulate)	100 (Particulate)	120 (Particulate)	-	-	-	-	-	-
188	557-04-0	Magnesium stearate	-	-	-	-	-	100 (Particulate)	35 (Health)	-	-	-
189	121-75-5	Malathion	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
190	108-31-6	Maleic anhydride	-	-	-	-	-	100 (Health)	30 (Health)	-	-	-
191	7439-96-5	Manganese compounds (including permanganates)	-	-	-	-	-	7.5 (Health)	2.5 (Health)	-	-	-
192	N/A	Mercaptans - see notes #12, #14, #15	Until Feb. 1, 2013	20 (Odour)	20 (Odour)	-	-	-	-	-	-	-
			After Feb. 1, 2013	-	10 (Odour) [12]	-	13 (Odour); 10 minute [14]	-	-	-	-	-
193	120-78-5	Mercaptobenzothiazole disulphide	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
194	7439-97-6	Mercury (Hg)	-	5 (Health)	5 (Health)	2 (Health)	-	-	-	-	-	-
195	7439-97-6	Mercury (as Hg) - alkyl compounds	-	1.5 (Health)	1.5 (Health)	0.5 (Health)	-	-	-	-	-	-
196	108-62-3	Metaldehyde (Acetaldehyde tetramer)	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
197	79-41-4	Methacrylic acid	-	-	-	-	-	2,000 (Odour)	TBU - 2,000 (Odour) [5]	-	-	-
198	101-68-8	Methane diphenyl diisocyanate (MDI Monomer)	Until Feb. 1, 2010	-	-	-	-	3 (Health)	-	-	7	7
			After Feb. 1, 2010	-	2 (Health)	0.7(Health)	-	-	-	-	7	7
199	67-56-1	Methanol (Methyl alcohol)	-	12,000 (Health)	12,000 (Health)	4,000 (Health)	-	-	-	-	-	-
200	70657-70-4	Methoxy-1-propyl acetate, 2-	-	-	-	-	-	4,600 (Health)	1,530 (Health)	-	-	-
201	72-43-5	Methoxychlor	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
202	96-33-3	Methyl acrylate	-	4 (Odour)	4 (Odour)	-	-	-	-	TBU - 4 (Odour); 1 hour [5]	-	-
203	74-83-9	Methyl bromide	-	-	-	-	-	4,000 (Health)	1,350 (Health)	-	-	-
204	74-87-3	Methyl chloride	Until Feb. 1, 2013	-	-	-	-	See note #7	-	-	9,600	3,200
			After Feb. 1, 2013	-	960 (Health)	320 (Health)	-	-	-	-	9,600	3,200
205	71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	-	350,000 (Health)	350,000 (Health)	115,000 (Health)	-	-	-	-	-	-
206	78-93-3	Methyl ethyl ketone (2-Butanone)	Until Feb. 1, 2010	30,000 - see note #1a	-	-	-	-	-	-	30,000	10,000
			After Feb. 1, 2010	-	3,000 (Health)	1,000 (Health)	-	-	-	-	30,000	10,000
207	1338-23-4	Methyl ethyl ketone peroxide	-	-	-	-	-	250 (Health)	80 (Health)	200 (Health); 1 hour	-	-
208	108-10-1	Methyl isobutyl ketone	-	1,200 (Odour)	1,200 (Odour)	-	-	-	TBU - 1,200 (Odour) [5]	-	-	-
209	624-83-9	Methyl isocyanate	Until Feb. 1, 2010	See note #6	-	-	-	-	-	-	10	10
			After Feb. 1, 2010	-	3 (Health)	1 (Health)	-	-	-	-	10	10
210	80-62-6	Methyl methacrylate	-	860 (Odour)	860 (Odour)	-	-	-	TBU - 860 (Odour) [5]	-	-	-

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						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
211	119-36-8	Methyl salicylate	-	-	-	-	-	300 (Health)	100 (Health)	-	-	-
212	98-83-9	Methyl styrene, alpha	-	-	-	-	-	See note #6a	-	24,000 (Health); 1 hour	-	-
213	1634-04-4	Methyl tert-butyl ether	-	-	-	-	-	2,200 (Odour)	7,000 (Health)	-	-	-
214	110-12-3	Methyl-2-hexanone, 5-	-	-	-	-	-	460 (Odour)	-	630 (Odour); 10 minute	-	-
215	872-50-4	Methyl-2-pyrrolidone, N-	-	-	-	-	-	See note #6a	-	40,000 (Health); 1 hour	-	-
216	110-43-0	Methyl-n-amyl ketone	-	-	-	-	-	See note #6a	4,600 (Health)	-	-	-
217	109-87-5	Methylal	-	-	-	-	-	18,000 (Health)	6,200 (Health)	-	-	-
218	12108-13-3	Methylcyclopentadienyl manganese tricarbonyl (MMT)	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
219	75-09-2	Methylene chloride	Until Feb. 1, 2010	-	-	-	-	5,300 - see note #1a	-	-	22,000	22,000
			After Feb. 1, 2010	-	660 (Health)	220 (Health)	-	-	-	-	22,000	22,000
220	101-77-9	Methylene dianiline	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
221	75-11-6	Methylene iodide	-	-	-	-	-	195 (Health)	65 (Health)	-	-	-
222	101-14-4	Methylene-bis-2-chloroaniline, 4,4-	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
223	22832-87-7	Miconazole nitrate	-	-	-	-	-	15 (Health)	5 (Health)	-	-	-
224	N/A	Milk powder	-	20 (Soiling)	20 (Soiling)	20 (Soiling & Odour)	-	-	-	-	-	-
225	N/A	Mineral spirits - see note #16	Until Feb. 1, 2010	7,800 - see note #1a	-	-	-	-	-	-	30,000	26,000
			After Feb. 1, 2010	-	3,000 (Odour)	2,600 (Health)	-	-	-	-	30,000	26,000
226	7439-98-7	Molybdenum	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
227	108-90-7	Monochlorobenzene	-	-	-	-	-	4,200 (Health)	-	3,500 (Health); 1 hour 4,500 (Odour); 10 minute	-	-
228	74-89-5	Monomethyl amine	-	25 (Odour)	25 (Odour)	-	-	-	TBU - 25 (Odour) [5]	-	-	-
229	91-20-3	Naphthalene	-	-	-	-	-	36 (Odour)	22.5 (Health)	50 (Odour); 10 minute	-	-
230	90-15-3	Naphthol, alpha-	-	-	-	-	-	100 (Health)	100 (Health)	-	-	-
231	7440-02-0	Nickel	-	5 (Vegetation)	5 (Vegetation)	2 (Vegetation)	-	-	-	-	-	-
232	13463-39-3	Nickel carbonyl	-	1.5 (Health)	1.5 (Health)	0.5 (Health)	-	-	-	-	-	-
233	7697-37-2	Nitric acid	-	100 (Corrosion)	100 (Corrosion)	35 (Corrosion)	-	-	-	-	-	-
234	139-13-9	Nitrilotriacetic acid	-	100 (Particulate)	100 (Particulate)	120 (Particulate)	-	-	-	-	-	-
235	10102-44-0	Nitrogen oxides - see note #17	-	500 (Health)	500 (Health)	200 (Health)	400 (Health); 1 hour	-	-	-	-	-
236	55-63-0	Nitroglycerin	-	-	-	-	-	10 (Health)	3 (Health)	-	-	-
237	55-18-5	Nitrosodiethylamine, N-	-	-	-	-	-	CARC	CARC	-	-	-
238	62-75-9	Nitrosodimethylamine, N-	-	-	-	-	-	CARC	CARC	-	-	-
239	10024-97-2	Nitrous oxide	-	-	-	-	-	27,000 (Health)	9,000 (Health)	-	-	-
240	111-65-9	Octane	-	-	-	-	-	45,400 (Odour)	-	61,800 (Odour); 10 minute	-	-
241	25377-83-7	Octene, 1-	-	-	-	-	-	150,000 (Health)	50,000 (Health)	-	-	-
242	112-80-1	Oleic acid	-	-	-	-	-	6 (Health)	-	5 (Health); 1 hour	-	-
243	144-62-7	Oxalic acid	-	-	-	-	-	75 (Health)	25 (Health)	-	-	-
244	90438-79-2	Oxo-heptyl acetate	-	-	-	-	-	255 (Health)	85 (Health)	-	-	-

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				Schedule 1 Standard with Half Hour Averaging Time (µg/m³)	Schedule 2 Standard with Half Hour Averaging Time (µg/m³)	Schedule 3 Standards with Variable Averaging Times [3]		½ Hour Guideline (µg/m³) (When Sections 18, 19 Apply)	24 Hour Guideline (µg/m³) [3] (When Section 20 Applies)	Other Time Period Guideline (µg/m³; time period) [3, 3a] (When Section 20 Applies)	½ Hour URT (µg/m³)	24 Hour URT (µg/m³)
						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
245	88230-35-7	Oxo-hexyl acetate	-	-	-	-	-	255 (Health)	85 (Health)	-	-	-
246	10028-15-6	Ozone	-	200 (Health)	200 (Health)	-	165 (Health); 1 hour	-	-	-	-	-
247	7657-10-1	Palladium - water soluble compounds	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
248	1910-42-5	Paraquat dichloride - respirable	-	-	-	-	-	0.009 (Health)	0.003 (Health)	-	-	-
249	1910-42-5	Paraquat dichloride - total	-	-	-	-	-	0.045 (Health)	0.015 (Health)	-	-	-
250	1406-05-9	Penicillin	-	-	-	-	-	0.3 (Health)	0.1 (Health)	-	-	-
251	19624-22-7	Pentaborane	-	3 (Health)	3 (Health)	1 (Health)	-	-	-	-	-	-
252	87-86-5	Pentachlorophenol	-	-	-	-	-	60 (Health)	20 (Health)	-	-	-
253	127-18-4	Perchloroethylene	Until Feb. 1, 2010	-	-	-	-	10,000 - see note #1a	-	-	10,800	3,600
			After Feb. 1, 2010	-	1,080 (Health)	360 (Health)	-	-	-	-	10,800	3,600
254	108-95-2	Phenol	Until Feb. 1, 2010	100 (Health)	-	-	-	-	-	-	900	300
			After Feb. 1, 2010	-	100 (Health)	30 (Health)	-	-	-	-	900	300
255	75-44-5	Phosgene	-	130 (Health)	130 (Health)	45 (Health)	-	-	-	-	-	-
256	7803-51-2	Phosphine	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
257	7664-38-2	Phosphoric acid - see note #18	Until Feb. 1, 2013	100 (Particulate)	100 (Particulate)	See note #7	-	-	-	-	210	70
			After Feb. 1, 2013	-	21 (Health)	7 (Health)	-	-	-	-	210	70
258	10025-87-3	Phosphorous oxychloride	-	-	-	-	-	40 (Health)	12 (Health)	-	-	-
259	10026-13-8	Phosphorous pentachloride	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
260	85-44-9	Phthalic anhydride	-	100 (Particulate)	100 (Particulate)	120 (Particulate)	-	-	-	-	-	-
261	2062-78-4	Pimozide	-	-	-	-	-	3 (Health)	1 (Health)	-	-	-
262	7440-06-4	Platinum - water soluble compounds	-	-	-	-	-	0.6 (Health)	0.2 (Health)	-	-	-
263	N/A	Polybutene-1-sulphone	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
264	1336-36-3	Polychlorinated biphenyls (PCBs)	-	-	-	-	-	0.45 (Health)	0.15 (Health)	-	-	-
265	9010-98-4	Polychloroprene	-	-	-	-	-	100 (Particulate)	500 (Health)	-	-	-
266	9016-87-9	Polymeric methane diphenyl diisocyanate (PMDI)	Until Feb. 1, 2010	See note #6	-	-	-	-	-	-	7	7
			After Feb. 1, 2010	-	2 (Health)	0.7 (Health)	-	-	-	-	7	7
267	151-50-8	Potassium cyanide	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
268	1310-58-3	Potassium hydroxide	-	-	-	-	-	28 (Corrosion)	14 (Corrosion)	-	-	-
269	7757-79-1	Potassium nitrate	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
270	71-23-8	Propanol, n- (Propyl alcohol)	-	-	-	-	-	48,000 (Health)	16,000 (Health)	-	-	-
271	123-38-6	Propionaldehyde	-	-	-	-	-	7 (Odour)	-	10 (Odour); 10 minute	-	-
272	79-09-4	Propionic acid	-	-	-	-	-	100 (Odour)	-	TBU - 100 (Odour); 1 hour [5]	-	-
273	123-62-6	Propionic anhydride (as Propionic acid)	-	-	-	-	-	100 (Odour)	-	TBU - 100 (Odour); 1 hour [5]	-	-
274	109-60-4	Propyl acetate, n-	-	-	-	-	-	900 (Odour)	6,600 (Health)	-	-	-
275	115-07-1	Propylene	Until Feb. 1, 2013	See note #6	-	-	-	-	-	-	120,000	40,000
			After Feb. 1, 2013	-	12,000 (Health)	4,000 (Health)	-	-	-	-	120,000	40,000

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				Schedule 1 Standard with Half Hour Averaging Time (µg/m³)	Schedule 2 Standard with Half Hour Averaging Time (µg/m³)	Schedule 3 Standards with Variable Averaging Times [3]		½ Hour Guideline (µg/m³) (When Sections 18, 19 Apply)	24 Hour Guideline (µg/m³) [3] (When Section 20 Applies)	Other Time Period Guideline (µg/m³; time period) [3, 3a] (When Section 20 Applies)	½ Hour URT (µg/m³)	24 Hour URT (µg/m³)
						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
276	78-87-5	Propylene dichloride	-	2,400 (Odour)	2,400 (Odour)	-	-	-	TBU - 2,400 (Odour) [5]	-	-	-
277	57-55-6	Propylene glycol	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
278	107-98-2	Propylene glycol methyl ether	-	-	-	-	-	89,000 (Odour)	-	121,000 (Odour); 10 minute	-	-
279	108-65-6	Propylene glycol monomethyl ether acetate	-	-	-	-	-	5,000 (Odour)	TBU - 5,000 (Odour) [5]	-	-	-
280	75-56-9	Propylene oxide	Until Feb. 1, 2010	450 - see note #1a	-	-	-	-	-	-	450	150
			After Feb. 1, 2010	-	4.5 (Health)	1.5 (Health)	-	-	-	-	450	150
281	110-86-1	Pyridine	-	-	-	-	-	60 (Odour)	150 (Health)	80 (Odour); 10 minute	-	-
282	106-51-4	Quinone	-	-	-	-	-	45 (Health)	15 (Health)	-	-	-
283	7782-49-2	Selenium	-	-	-	-	-	20 (Health)	10 (Health)	-	-	-
284	7803-62-5	Silane	-	-	-	-	-	450 (Health)	150 (Health)	-	-	-
285	14464-46-1	Silica - respirable (<10 µm diameter), cristabolite	-	-	-	-	-	15 (Health)	5 (Health)	-	-	-
286	14808-60-7	Silica - respirable (<10 µm diameter), quartz	-	-	-	-	-	15 (Health)	5 (Health)	-	-	-
287	15468-32-3	Silica - respirable (<10 µm diameter), tridymite	-	-	-	-	-	15 (Health)	5 (Health)	-	-	-
288	7440-22-4	Silver	-	3 (Health)	3 (Health)	1 (Health)	-	-	-	-	-	-
289	7631-90-5	Sodium bisulphite	-	-	-	-	-	100 (Particulate)	120 (Particulate & Health)	-	-	-
290	7775-09-9	Sodium chlorate	-	-	-	-	-	18 (Health)	6 (Health)	-	-	-
291	7758-19-2	Sodium chlorite	-	-	-	-	-	60 (Health)	20 (Health)	-	-	-
292	143-33-9	Sodium cyanide	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
293	1310-73-2	Sodium hydroxide	-	-	-	-	-	20 (Corrosion)	10 (Corrosion)	-	-	-
294	7631-99-4	Sodium nitrate	-	-	-	-	-	100 (Particulate)	7,000 (Health)	-	-	-
295	7772-99-8	Stannous chloride (as Sn)	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
296	7440-24-6	Strontium	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
297	1633-05-2	Strontium carbonate	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
298	18480-07-4	Strontium hydroxide	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
299	1314-11-0	Strontium oxide	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
300	100-42-5	Styrene	-	400 (Odour)	400 (Odour)	400 (Health)	-	-	-	-	-	-
301	5329-14-6	Sulfamic acid	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
302	7446-09-5	Sulphur dioxide	-	830 (Health)	830 (Health)	275 (Health & Vegetation)	690 (Health & Vegetation); 1 hour	-	-	-	-	-
303	2551-62-4	Sulphur hexafluoride	-	-	-	-	-	1,800,000 (Health)	600,000 (Health)	-	-	-
304	7664-93-9	Sulphuric acid	Until Feb. 1, 2013	See note #7	See note #7	See note #7	-	-	-	-	30	15
			After Feb. 1, 2013	-	15 (Health)	5 (Health)	-	-	-	-	30	15
305	N/A	Suspended particulate matter (< 44 µm diameter)	-	100 (Visibility)	100 (Visibility)	120 (Visibility)	-	-	-	-	-	-
306	14807-96-6	Talc - fibrous	-	-	-	-	-	5 (Health)	2 (Health)	-	-	-
307	13494-80-9	Tellurium (except hydrogen telluride)	-	30 (Health)	30 (Health)	10 (Health)	-	-	-	-	-	-
308	4559-86-8	Tetrabutylurea	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
309	109-99-9	Tetrahydrofuran	-	93,000 (Odour)	93,000 (Odour)	-	-	-	TBU - 93,000 (Odour) [5]	-	-	-

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				Schedule 1 Standard with Half Hour Averaging Time (µg/m³)	Schedule 2 Standard with Half Hour Averaging Time (µg/m³)	Schedule 3 Standards with Variable Averaging Times [3]		½ Hour Guideline (µg/m³) (When Sections 18, 19 Apply)	24 Hour Guideline (µg/m³) [3] (When Section 20 Applies)	Other Time Period Guideline (µg/m³; time period) [3, 3a] (When Section 20 Applies)	½ Hour URT (µg/m³)	24 Hour URT (µg/m³)
						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
310	137-26-8	Tetramethyl thiuram disulphide	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-
311	62-56-6	Thiourea	-	-	-	-	-	60 (Health)	20 (Health)	-	-	-
312	7440-31-5	Tin	-	30 (Health)	30 (Health)	10 (Health)	-	-	-	-	-	-
313	7440-32-6	Titanium	-	100 (Particulate)	100 (Particulate)	120 (Particulate)	-	-	-	-	-	-
314	13463-67-7	Titanium dioxide	-	-	-	-	-	100 (Health)	34 (Health)	-	-	-
315	35711-34-3	Tolmetin sodium	-	-	-	-	-	15 (Health)	5 (Health)	-	-	-
316	108-88-3	Toluene	-	2,000 (Odour)	2,000 (Odour)	-	-	-	TBU - 2,000 (Odour) [5]	-	-	-
317	584-84-9	Toluene di-isocyanate, 2,4-	Until Feb. 1, 2010	1 (Health)	-	-	-	-	-	-	2	2
			After Feb. 1, 2010	-	0.6 (Health)	0.2 (Health)	-	-	-	-	2	2
318	26471-62-5	Toluene di-isocyanate, 2,4- and 2,6- (mixed isomers)	Until Feb. 1, 2010	See note #6	-	-	-	-	-	-	2	2
			After Feb. 1, 2010	-	0.6 (Health)	0.2 (Health)	-	-	-	-	2	2
319	N/A	Total Reduced Sulphur (TRS) Compounds (facilities that are part of the class identified by NAICS code 3221 (Pulp, Paper and Paperboard Mills) - see notes #14, #19	Until Feb. 1, 2013	-	-	-	-	40 (Odour)	-	-	210	70
			After Feb. 1, 2013	-	10 (Health & Odour)	14 (Health)	13 (Odour); 10 minute [14]	-	-	-	210	70
320	N/A	Total Reduced Sulphur (TRS) Compounds (other facilities) - see notes #14, #19	Until Feb. 1, 2013	-	-	-	-	40 (Odour)	-	-	210	70
			After Feb. 1, 2013	-	10 (Health & Odour)	7 (Health)	13 (Odour); 10 minute [14]	-	-	-	210	70
321	56-35-9	Tributyltin oxide	-	-	-	-	-	0.42 (Health)	0.14 (Health)	-	-	-
322	120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	100 (Particulate)	400 (Health)	-	-	-
323	79-01-6	Trichloroethylene (TCE)	Until Feb. 1, 2010	3,500 - see note #1a	-	-	-	-	-	-	3,600	1,200
			After Feb. 1, 2010	-	36 (Health)	12 (Health)	-	-	-	-	3,600	1,200
324	75-69-4	Trichlorofluoromethane - see note #10	-	-	-	-	-	18,000 (Health) [10]	6,000 (Health) [10]	-	-	-
325	76-05-1	Trifluoroacetic acid	-	-	-	-	-	45 (Health)	15 (Health)	-	-	-
326	76-13-1	Trifluorotrichloroethane - see note #10	-	2,400,000 (Health) [10]	2,400,000 (Health) [10]	800,000 (Health) [10]	-	-	-	-	-	-
327	75-50-3	Trimethyl amine	-	-	-	-	-	0.5 (Odour)	-	TBU - 0.5 (Odour); 1 hour [5]	-	-
328	526-73-8	Trimethylbenzene, 1,2,3- (individual isomer or Trimethylbenzene mixture)	Until Feb. 1, 2013	See note #6	-	-	-	-	-	-	6,600	2,200
			After Feb. 1, 2013	-	660 (Health)	220 (Health)	-	-	-	-	6,600	2,200
329	95-63-6	Trimethylbenzene, 1,2,4- (individual isomer or Trimethylbenzene mixture)	Until Feb. 1, 2013	-	-	-	-	660 (Health) [13]	-	-	6,600	2,200
			After Feb. 1, 2013	-	660 (Health)	220 (Health)	-	-	-	-	6,600	2,200
330	108-67-8	Trimethylbenzene, 1,3,5- (individual isomer or Trimethylbenzene mixture)	Until Feb. 1, 2013	See note #6	-	-	-	-	-	-	6,600	2,200
			After Feb. 1, 2013	-	660 (Health)	220 (Health)	-	-	-	-	6,600	2,200
331	77-99-6	Trimethylol propane	-	-	-	-	-	100 (Health)	-	-	-	-
332	N/A	Tripropyltin methacrylate	-	-	-	-	-	3 (Health)	1 (Health)	-	-	-
333	7440-62-2	Vanadium	-	5 (Health)	5 (Health)	2 (Health)	-	-	-	-	-	-
334	75-01-4	Vinyl chloride	-	3 (Health)	3 (Health)	1 (Health)	-	-	-	-	300	100
335	75-35-4	Vinylidene chloride (1,1-Dichloroethene)	-	30 (Health)	30 (Health)	10 (Health)	-	-	-	-	-	-
336	81-81-2	Warfarin	-	-	-	-	-	30 (Health)	10 (Health)	-	-	-

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				Schedule 1 Standard with Half Hour Averaging Time (µg/m³)	Schedule 2 Standard with Half Hour Averaging Time (µg/m³)	Schedule 3 Standards with Variable Averaging Times [3]		½ Hour Guideline (µg/m³) (When Sections 18, 19 Apply)	24 Hour Guideline (µg/m³) [3] (When Section 20 Applies)	Other Time Period Guideline (µg/m³; time period) [3, 3a] (When Section 20 Applies)	½ Hour URT (µg/m³)	24 Hour URT (µg/m³)
						24 Hour Standard (µg/m³)	Other Time Period Standard (µg/m³; time period) [3a]					
337	N/A	Whey powder	-	-	-	-	-	100 (Particulate)	120 (Particulate)	-	-	-
338	1330-20-7	Xylenes	Until Feb. 1, 2010	2,300 (Odour)	-	-	-	-	-	3,000 (Odour); 10 minute	22,000	7,300
			After Feb. 1, 2010	-	2,200 (Health)	730 (Health)	-	-	-	3,000 (Odour); 10 minute	22,000	7,300
339	7440-66-6	Zinc	-	100 (Particulate)	100 (Particulate)	120 (Particulate)	-	-	-	-	-	-
340	7646-85-7	Zinc chloride	-	-	-	-	-	12 (Health)	-	10 (Health); 1 hour	-	-
341	557-05-1	Zinc stearate	-	-	-	-	-	100 (Particulate)	35 (Health)	-	-	-

NOTES:

1: The limiting effects for O. Reg. 419 standards and the current MOE guidelines are identified in brackets beside the respective limits.

1a: For these chemicals, the limiting effect is not identified since the standard is based not only on health or environmental effects.

2: O. Reg. 419 standards to be used with the approved models listed in section 6 of O. Reg. 419. For further information on how to use these models, see the *Air Dispersion Modelling Guideline for Ontario* (PIBS # 5165e) and *Procedure for Preparing an Emission Summary and Dispersion Modelling Report* (PIBS# 3614e02). For more information on dates when new models must be used and the phase-in dates for standards in Schedules 1, 2 and 3, see sections 18, 19 and 20 of O. Reg. 419; for target sectors – see Schedules 4 and 5 of O. Reg. 419.

3: For contaminants in Schedule 3 with multiple standards or having multiple guidelines (when Section 20 applies), all of them must be used for assessment purposes since each represents a different type of effect linked to a particular averaging period.

3a: The MOE will be publishing a technical bulletin on *Methodology for Modelling Assessments of Contaminants with 10 Minute Average Standards and Guidelines.* As the title suggests, this bulletin will address modeling assessments for standards or guidelines with a 10-minute averaging period. Until this bulletin is published, the MOE recommends that these 10-minute standards/guidelines not be used in modeling assessments. For more information on odour-based standards, please see subsection 20 (2.2) of the O. Reg. 419.

4: Upper Risk Thresholds (URT) listed in Schedule 6 of O. Reg. 419 are **not** standards. Upper Risk Thresholds have separate and distinct regulatory and notification requirements as set out in section 30 of O. Reg. 419 for the Schedule 6 values. The requirements prescribed in section 30 took effect November 30, 2005.

5: TBU =To Be Updated. These odour-based limits (either 1-hour or 24-hour averaging period) are 'TBU' - flagged, since the MOE plans to update them in the future using a more appropriate odour-based averaging time (i.e., 10 minutes). In addition, these contaminants may need the development of health-based standards. At this point, they provide the basis of the half-hour MOE standards and guidelines.

6: Until the new standards for contaminants with no previous MOE standard or guideline become effective, emitters must ensure, as a minimum, that they do not exceed the concentrations set out in Schedule 6 of O. Reg. 419. While O. Reg. 419 does not require facilities to meet the new or updated standards in Schedule 2 or 3 until they are phased-in (or 'speed up' under section 20(4)), working towards meeting these standards is strongly recommended since the assessment of the potential adverse effects for these contaminants will be based on future standards.

6a: For contaminants without half-hour limits but having guidelines with other averaging times, the current interim approach of using the guidelines with other averaging period as a half-hour limit (i.e., without time adjustment modification) is continued as a screening approach (e.g., in determining whether Maximum Concentration Level (MCL) Assessment Submissions from proponents or Acceptability of Maximum Ground Level Concentration (GLC) requests are required).

7: For the following substances (see Table 1 below) with new/updated standards in Schedules 2 and 3 under O. Reg. 419, previous half-hour guidelines and/or standards in Schedule 1, 2 and 3 are not listed in this document because the Upper Risk Thresholds (URTs) in Schedule 6 of O.Reg. 419 for these chemicals are more stringent than the previously listed guidelines/standards.

Until the standards for these chemicals are phased-in, applications for section 9 (of the EPA) Certificates of Approvals, and Emission Summary and Dispersion Modelling Reports prepared in accordance with O. Reg. 419, will be assessed to ensure as a minimum that the concentrations are below those set out in Schedule 6 of the O.Reg. 419. Furthermore, the MOE may use the principles stated in the *Guideline for the Implementation of Air Standards in Ontario* (PIBS # 5166e) to assess/impose an appropriate limit or appropriate action for any contaminant on a site-specific basis where warranted. It is important to note that all facilities must demonstrate compliance with the standards in Schedule 2 or 3 (depending on which Schedule applies to the facility) by February 1, 2010 (or by their respective phase-in dates where applicable).

Table 1 – Removed Standards/Guidelines for the Chemicals with New/Updated Standards in Schedules 2 and 3 of O. Reg. 419/05

Item	Contaminant Name	CAS No.	Schedule 1 ½ Hour Standard	Schedule 2 ½ Hour Standard	Schedule 3 24 Hour Standard	½ Hour Guideline
7	Acrolein	107-02-8	-	-	-	Removed
53	Cadmium (and Cadmium Compounds)	7440-43-9	Removed	Removed	Removed	-
68	Chlorine dioxide	10049-04-4	Removed	Removed	Removed	-
79	Cyclohexane	110-82-7	-	-	-	Removed
166	Hexamethylene diisocyanate (HDI) monomer	822-06-0	-	-	-	Removed
169	Hexane, n- (part of a mixture)	110-54-3	-	-	-	Removed
169	Hexane, n- (n-Hexane and Hexane isomers only)	110-54-3	-	-	-	Removed
173	Hydrogen cyanide	74-90-8	Removed	-	-	-
204	Methyl chloride	74-87-3	-	-	-	Removed
257	Phosphoric acid	7664-38-2	-	-	Removed	-
304	Sulphuric acid	7664-93-9	Removed	Removed	Removed	-

8: Half-hour standard for carbon monoxide is based on high background levels from automobiles (i.e., individual facilities are only allowed a small fraction of the total airshed).

9: Calculation of TEQ (Toxicity Equivalent): International toxicity equivalency factors (I-TEFs) are applied to 17 dioxin and furan isomers of concern to convert them into 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin) toxicity equivalents. The conversion involves multiplying the concentration of the isomer by the appropriate I-TEF to yield the TEQ for this isomer. Summing the individual TEQ values for each of the isomers

of concern provides the total toxicity equivalent level for the sample mixture. A table, listing the 17 isomers of concern and their I-TEFs can be found in the MOE publication titled: *Dioxins and Furans* or in the example Table 2 below.

Table 2 – Sample Calculation for Toxicity Equivalent Values for Chlorinated Dioxin and Furan compounds

Dioxin/Furan Isomers of Concern	International Toxicity Equivalency Factors (I-TEFs)	Concentration pg/m^3 (Analytically measured)	Toxicity Equivalent (TEQ) pg TEQ/m^3
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1	0.01	0.01
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5	0.011	0.0055
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.006	0.0006
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.01	0.001
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1	0.019	0.0019
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.01	0.15	0.0015
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	0.001	-	-
2,3,7,8-Tetrachlorodibenzofuran	0.1	0.11	0.011
2,3,4,7,8-Pentachlorodibenzofuran	0.5	0.033	0.0165
1,2,3,7,8-Pentachlorodibenzofuran	0.05	0.024	0.0012
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	0.03	0.003
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	0.016	0.0016
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1	0.016	0.0016
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	0.007	0.0007
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	0.047	0.00047
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	0.008	0.00008
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	0.001	-	-
TOTAL TOXICITY EQUIVALENT			**0.05665***

* Sum of toxicity equivalents of individual isomers. The I-TEF scheme is intended to be used with isomer specific analytical results

10: See O. Reg. 717/94 "Solvents" under the Environmental Protection Act, which is based on the Montreal Protocol, for further restrictions on these, and several other ozone-depleting substances.

11: Based on the increased evidence for carcinogenicity of chromium VI compounds, the MOE has decided to revise the chromium guidelines with the intent of developing a standard for chromium (VI) compounds and a separate standard to include chromium (III) and chromium (II) compounds. Until a decision is made on the standard for chromium VI, the existing guideline will only be applied to chromium (III) and chromium (II) compounds (i.e. di- and trivalent forms of chromium only). Chromium VI compounds will be assessed separately like other contaminants with no MOE standards or guidelines.

12: For facilities releasing only one of the four major components of TRS, only the respective standard or guideline for that specific species will apply (not the TRS limit). If a facility emits a mixture of TRS compounds, then the TRS standards would apply (see note #19). For more information, please see subsection 20.1 of the O. Reg. 419.

13: Since the new Schedule 2 standard has become less stringent than the existing half-hour guideline, this guideline has been changed to correspond the future standard. This guideline will be in use until the standard phase-in date.

14: Odour-based 10-minute standards for hydrogen sulphide, mercaptans and total reduced sulphur (TRS) compounds have been set. O. Reg. 419 states that it is an offence to discharge a contaminant with a standard that is in Schedule 3 with a 10-minute averaging time such that the concentration exceeds the standard at any location where and when human activities regularly occur. This offence relates to a monitored or measured exceedence, not to a modeled exceedence. For further information on modeling for 10-minute averages, please see note 3a.

15: For the purposes of O. Reg. 419, “mercaptan” means any organic compound that contains a thiol group. Mercaptans are expressed as methyl mercaptan; an amount (or concentration) of mercaptans shall be calculated in accordance with the following formula:

$A = \Sigma(B \times C \div 48)$, where,

A = the amount (or concentration) of total mercaptans,

B = the amount (or concentration) of each mercaptan,

C = the molecular weight of each mercaptan (See subsections 1(1) and 1(2.1) of O. Reg. 419).

16: For the purposes of O. Reg. 419, “mineral spirits” means a petroleum distillate mixture of C_7 to C_{12} alkanes (paraffins) and cycloalkanes (naphthenes) where the mixture is in the range from 5 to 20 per cent aromatics by weight, is less than 0.1 per cent benzene by weight, has a boiling point in the range from 130 to 220 degrees Celsius and has a flash point in the range from 21 to 60 degrees Celsius (see subsection 1(1) of O. Reg. 419).

17: Nitrogen oxides (NOx) are defined to be the sum of nitrogen dioxide (NO_2) and nitric oxide (NO). Emissions of NOx consist mainly of NO, with some NO_2. In ambient air, NO converts to NO_2. NO_2 has adverse effects at much lower concentrations than NO. Recognizing these factors, the Schedule 3 standard for nitrogen oxides is based on the health effects of NO_2.

For the purposes of O. Reg 419, nitrogen oxides are expressed as nitrogen dioxide and an amount (or concentration) of nitrogen oxides shall be calculated in accordance with the following formula:

A = (B × 1.53) + C, where,

A = the amount (or concentration) of nitrogen oxides,

B = the amount (or concentration) of nitric oxide,

C = the amount (or concentration) of nitrogen dioxide (see subsection 1 (2.2) of O. Reg. 419).

In evaluating monitoring data, Schedule 3 standards with 1-hour and 24-hour averaging times should be only compared to monitored NO_2 data.

18: For the purposes of O. Reg. 419, phosphoric acid is expressed as total phosphoric acid and an amount (or concentration) of total phosphoric acid shall be calculated in accordance with the following formula:

A = B + (C × 1.40), where,

A = the amount (or concentration) of total phosphoric acid,

B = the amount (or concentration) of phosphoric acid,

C = the amount (or concentration) of phosphoric pentoxide (see subsection 1(2.3) of O. Reg. 419).

19: For the purposes of O. Reg. 419, "total reduced sulphur (TRS) compounds**"** means a mixture of reduced sulphur compounds and includes dimethyl disulphide, dimethyl sulphide, hydrogen sulphide and mercaptans. Standards set out in Schedule 2 or 3 for total reduced sulphur (TRS) compounds are applied to the facilities releasing more than one species of the four major components of TRS (in this case the standards and guidelines of the individual components of TRS will not apply). An amount (or concentration) of total reduced sulphur (TRS) compounds is calculated as the sum of the amounts (or concentrations) of the reduced sulphur compounds (see subsections 1(1) and 1(2.4) of O. Reg. 419).

TERMS and SYMBOLS:

CARC: Carcinogen. This entry implies that there is no assigned standard or guideline at this time. Emissions to the environment are to be prevented or limited to the greatest extent possible.

N/A: Not Available

Growing Season**:**	May 1 - September 30 - Northern Ontario, Northern Region April 1 - October 31 - Southern Ontario, SW, WC, E & C Regions
Non Growing Season:	October 1 - April 30 - Northern Ontario, Northern Region November 1 - March 31 - Southern Ontario, SW, WC, E & C Regions

* - average monthly results for growing season

** - average results for any single month

*** - average of 2 consecutive months

$^{+}$ = arithmetic mean