

Appendix B

Category II and Category III

Tables

APPENDIX B

TABLE 1

Discussed in Section II.C.2

CATEGORY II AND CATEGORY III CONTAMINANTS THAT NOW MEET CATEGORY I CRITERIA

Contaminant	Current Category	US EPA Weight of Evidence	IARC Group Classification	Inhalation CPF [1/(mg/kg-day)]	Oral CPF [1/(mg/kg-day)]	Inhalation RfC (ug/m ³)	Proposed Revised HAAS (ug/m ³)	Existing HAAS (ug/m ³)
Lead Compounds	II	B2	2B				0.01	0.25
Pentachlorophenol	II	B2	2B		1.2e-01		0.029	1.19
Silica, crystalline *	II		1				(a)	0.12
Styrene	II		2B			1000	100	512
Acetaldehyde	III	B2	2B	7.70e-03		9	0.45	1800
Acrolein	III	C	3			0.02	0.002	2.5
Bromodichloromethane	III	B2	2B		6.20e-02		0.056	42
Dibromochloromethane	III	C			8.40e-02		0.042	39
1,1-Dichloroethane	III	C					0.01	19300
Furfural	III	(b)				50 (c)	5	80
Isophorone	III	C			9.50e-04		3.68	1400
Nitrobenzene	III		2B			2 (c)	0.2	119
1,2,3-Trichloropropane	III	B2			7 (d)		0.0005	14.3
Vinyl Acetate	III		2B			200	20	350

Notes:

Indicates compound where proposed HAAS differs by at least one order of magnitude from existing HAAS.

CPF - Cancer Potency Factor

HEAST - US EPA Health Effects Assessment Summary Tables. July 1997.

IARC - International Agency for Research on Cancer

RfC- Reference Concentration

US EPA - United States Environmental Protection Agency

Unless otherwise noted, source of updated toxicity values is US EPA Integrated Risk Information System (IRIS) database.

* - Please note that NTP has announced its intent to review Silica, crystalline for listing as a known human carcinogen in the 9th Edition of the NTP Report on Carcinogens. However, 3 members of the Vermont Air Toxicological Advisory Committee do not agree that Silica, crystalline should be reclassified as a Category I Contaminant.

(a) - Under review. To be determined at time of rule making because standard cancer models are not appropriate for assessing this compound.

(b) - National Toxicology Program abstract meets criteria for Category I.

(c) - Value presented in Table 2 of HEAST. Caveat: Derived from methodology that isn't current with the interim inhalation methodology used by the RfD/RfC workgroup.

(d) - Source: July 1997 US EPA Health Effects Assessment Summary Tables.

APPENDIX B
TABLE 2
Discussed in Section II.C.2

CATEGORY II CONTAMINANTS: UPDATED TOXICITY INFORMATION

Category II Contaminant	CAS Number	Basis of Proposed Revised HAAS (ug/m ³)	Threshold Limit Value Associated With Current HAAS (ug/m ³)	Time Factor	Uncertainty Factor
Barium, total	7440-39-3	0.5 RfC (a)	500	4.2	10
Bisphenol A, epichlorohydrin	25068-38-6	(b)	(b)		
4-Butyrolactone	96-48-0	(b)	(b)		
Chlorobenzene	108-90-7	20 RfC (a)	350,000	4.2	100 (h)
Chromium Compounds (c)		500 TLV	500	4.2	1000
Cumene	98-82-8	400 RfC	245,000	4.2	100
Cyclohexene	110-83-8	1,010,000 TLV	1015000	4.2	100
Dimethoxyethane	110-71-4	(b)	(b)		
Dimethylphthalate	131-11-3	5,000 TLV	5,000	4.2	10
Ethanolamine	141-43-5	6000 PEL	8,000	4.2	10
Fluoranthene	206-44-0	(b)	(b)		
Fluoride Compounds	7782-41-4	2,500 TLV	2,500	4.2	10
Lead Compounds	7439-92-1	(d)	NAAQS		
Manganese Compounds	7439-96-5	0.05 RfC	5,000	4.2	10
Mercury Compounds	7439-97-6	0.3 RfC	50	4.2	100
Mercury, Alkyl Compounds		10 TLV	10	4.2	100
2-Methoxyethanol	109-86-4	20 RfC	16000	4.2	10
Molybdenum Compounds	7439-98-7	5,000 TLV (e)	5,000	4.2	100
Naphthalene	91-20-3	50,000 PEL	50,000	4.2	100
Octachloronaphthalene	2234-13-1	100 TLV	100	4.2	100
Pentachloronaphthalene	1321-64-8	500 TLV	500	4.2	100
Pentachlorophenol	87-86-5	(d)	500	4.2	100
Phenanthrene	85-1-8	(b)	(b)		
Pyrene	129-0-0	(b)	(b)		
Pyridine	110-86-1	15,000 PEL	15,000	4.2	10
Selenium, total	7782-49-2	200 TLV	200	4.2	10
Silica, amorphous	61790-53-2	3,000 TLV (f)	10,000	4.2	10
Silica, crystalline	14808-60-7	(d)	50	4.2	100
Silica, fused	60676-86-0	100 TLV	100	4.2	100
Silicon tetrahydride	7803-62-5	6,600 TLV	7,000	4.2	100
Silver Compounds	7440-22-4	10 TLV	10	4.2	10
Sodium bromide	7647-15-6	(b)	(b)		
Stoddard solvent	8052-41-3	525,000 TLV	525,000	4.2	10
Styrene monomer	100-42-5	(d)	215,000	4.2	100
Tellurium Compounds	13494-80-9	100 TLV	100	4.2	10
Tetrachloronaphthalene	1335-88-2	2,000 TLV	2,000	4.2	100
Tin Compounds	7440-31-5	100 TLV (g)	2,000	4.2	100
Trichloronaphthalene	1321-65-9	5,000 TLV	5,000	4.2	100
Triethylamine	121-44-8	7 RfC	41,000	4.2	100
Triethylenetetramine	112-24-3	(b)	(b)		
Trifluorobromomethane	75-63-8	6,090,000 TLV	6,100,000	4.2	100
Trimethyl benzene	2551-13-7	123,000 TLV	123,000	4.2	100
1,2,4-Trimethyl benzene	95-63-6	125,000 REL	(b)	4.2	100
Xylene	1330-20-7	434,000 TLV	435000	4.2	100

Notes:

ACGIH - American Conference of Governmental Industrial Hygienists

CAS - Chemical Abstract System.

HAAS - Hazardous Ambient Air Standard in micrograms of compound per cubic meter of ambient air.

NAAQS - National Ambient Air Quality Standard

PEL - Permissible Exposure Limit established by federal Occupational Safety and Health Administration (OSHA), downloaded September 29, 1997.

REL - Recommended Exposure Limit established by federal National Institute for Occupational Safety and Health (NIOSH), June 1994.

RfC - Inhalation Reference Concentration. Unless otherwise noted, source is US EPA Integrated Risk Information System (IRIS) database.

TLV - Threshold Limit Value as cited in 1997 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices, ACGIH.

(a) - Value presented in Table 2 of HEAST. Caveat: Derived from methodology that isn't current with interim inhalation methodology used by RfD/RfC workgroup.

(b) - HAAS based upon available toxicity information.

(c) - Excluding Cr VI.

(d) - Indicates compound now meets Category I criteria. Please see Appendix B Table 1 for updated information.

(e) - Value derived for soluble molybdenum compounds.

(f) - For inhalable (total) particulate matter containing no asbestos and less than 1% crystalline silica.

(g) Value represents TLV for organic compounds as SN.

(h) - Proposed revised HAAS includes extra uncertainty factor of ten because compound is identified as potential carcinogen by ACGIH or NIOSH.

APPENDIX B
TABLE 3
Discussed in Section II.C.2

CATEGORY II CONTAMINANTS: PROPOSED REVISED HAZARDOUS AMBIENT AIR STANDARDS

Category II Contaminant	CAS Number	Proposed Revised HAAS (ug/m ³)	Existing HAAS (ug/m ³) *
Barium, total	7440-39-3	.5 (a)	11.9
Bisphenol A, epichlorohydrin	25068-38-6	74 (b)	74
4-Butyrolactone	96-48-0	12 (b)	12
Chlorobenzene	108-90-7	2.0 (a,f)	833
Chromium Compounds (d)		0.12 (c)	0.12
Cumene	98-82-8	400 (a)	583
Cyclohexene	110-83-8	2,404.8 (c)	2,420
Dimethoxyethane	110-71-4	17 (b)	17
Dimethylphthalate	131-11-3	119 (c)	120
Ethanolamine	141-43-5	142.9 (c)	190
Fluoranthene	206-44-0	130 (b)	130
Fluoride Compounds	7782-41-4	59.5 (c)	59.5
Lead Compounds	7439-92-1	(e)	0.25
Manganese Compounds	7439-96-5	.05 (a)	119
Mercury Compounds	7439-97-6	.3 (a)	0.12
Mercury, Alkyl Compounds		0.024 (c)	0.024
2-Methoxyethanol	109-86-4	20 (a)	381
Molybdenum Compounds	7439-98-7	11.9 (c)	12
Naphthalene	91-20-3	119 (c)	120
Octachloronaphthalene	2234-13-1	0.24 (c)	0.24
Pentachloronaphthalene	1321-64-8	1.2 (c)	1.19
Pentachlorophenol	87-86-5	(e)	1.19
Phenanthrene	85-1-8	1.3 (b)	1.3
Pyrene	129-0-0	3.4 (b)	3.4
Pyridine	110-86-1	357.1 (c)	357
Selenium, total	7782-49-2	4.8 (c)	4.8
Silica, amorphous	61790-53-2	71.4 (c)	240
Silica, crystalline	14808-60-7	(e)	0.12
Silica, fused	60676-86-0	0.24 (c)	0.24
Silicon tetrahydride	7803-62-5	15.71 (c)	16.7
Silver Compounds	7440-22-4	0.24 (c)	0.24
Sodium bromide	7647-15-6	1,470 (b)	1,470
Stoddard solvent	8052-41-3	12,500 (c)	12,500
Styrene monomer	100-42-5	(e)	512
Tellurium Compounds	13494-80-9	2.4 (c)	2.4
Tetrachloronaphthalene	1335-88-2	4.8 (c)	4.8
Tin Compounds	7440-31-5	0.24 (c)	4.8
Trichloronaphthalene	1321-65-9	11.9 (c)	11.9
Triethylamine	121-44-8	7 (a)	98
Triethylenetetramine	112-24-3	16 (b)	16
Trifluorobromomethane	75-63-8	14,500 (c)	14,525
Trimethyl benzene	2551-13-7	293 (c)	293
1,2,4-Trimethyl benzene	95-63-6	297.6 (c)	0.15
Xylene	1330-20-7	1,033.3 (c)	1,040

Notes:

Indicates compound where proposed HAAS differs by an order of magnitude or more from existing HAAS.

ACGIH - American Conference of Governmental Industrial Hygienists

CAS - Chemical Abstract System

HAAS - Hazard Ambient Air Standard in micrograms of compound per cubic meter of ambient air.

NIOSH - National Institute for Occupational Safety and Health

* - Existing values were derived either by adjusting occupational Threshold Limit Value or based on available toxicity information.

(a) - Value based on inhalation reference concentration.

(b) - Value derived based on available toxicity information.

(c) - Value based on adjusted occupational standard:uses most conservative of available compound specific Threshold Limit Value, Permissible Exposure Limit or Recommended Exposure Limit.

(d) - Excluding Cr VI.

(e) - Compound now meets Category I criteria. Please see Appendix B Table 1 for proposed revised HAAS.

(f) - Extra uncertainty factor of ten employed because compound's identified as potential carcinogen by either ACGIH or NIOSH.

Appendix B

Table 4

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: UPDATED TOXICITY INFORMATION

Contaminant	CAS Number	Basis of Proposed Revised HAAS (ug/m3)	Threshold Limit Value Associated With Existing HAAS (ug/m^3) (a)	Time Factor	Uncertainty Factor
Acetaldehyde	75-7-0	(b)	180,000 8	1	100
Acetic acid	64-19-7	25,000 TLV	25,000 8	1	100
Acetic anhydride	108-24-7	20,000 PEL	20,000 8	1	100
Acetone	67-64-1	1,188,000 TLV	1780000.0 8	1	10
Acetonitrile	75-05-8	50 (c) RfC	70,000 8	1	10
Acrolein	107-02-8	(b)	250 8	1	100
2-Amino-2-methyl-1-propanol	124-68-5	(d) TOX	(d) 24		
Ammonia	7664-41-7	100 RfC	18,000 8	1	10
Ammonium sulfate	7773-06-0	10,000 TLV	10,000 24	4.2	100
n-Amyl acetate	628-63-7	525,000 PEL	530,000 8	1	10
s-Amyl acetate	626-38-0	650,000 PEL	665,000 8	1	10
Antimony Compounds	7440-36-0	500 TLV	500 8	1	10
1-2-Benzenedicarboxylic acid	88-99-3	(d) TOX	(d) 24		
Benzyl alcohol	100-51-6	(d) TOX	(d) 8		
Bisphenol A resin	80-5-7	(d) TOX	(d) 24		
Bromodichloromethane	75-27-4	(b)	(d) 24		
2-Butoxyethanol	111-76-2	121,000 TLV	120,000 8	1	10
Butoxyethyl acetate	112-07-2	33,000 REL	(d) 8	1	100
2-(2-Butoxyethoxy)-ethanol	112-34-5	(d) TOX	(d) 24		
n-Butyl acetate	123-86-4	710,000 PEL	710,000 8	1	100
s-Butyl acetate	105-46-4	950,000 TLV	950,000 8	1	10
t-Butyl acetate	540-88-5	950,000 TLV	950,000 8	1	10
n-Butyl alcohol	71-36-3	300,000 PEL	150,000 24	4.2	100
s-Butyl alcohol	78-92-2	305,000 REL	305,000 8	1	100
t-Butyl alcohol	75-65-0	300,000 PEL, REL	300,000 8	1	100

Appendix B

Table 4

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: UPDATED TOXICITY INFORMATION

Contaminant	CAS Number	Basis of Proposed Revised HAAS (ug/m3)	Threshold Limit Value Associated With Existing HAAS (ug/m^3)	(a)	Time Factor	Uncertainty Factor
Butylamine	109-73-9	(d) TOX	15000	8	1	100
Butyl propasol	5131-66-8	(d) TOX	(d)	24		
p-t-Butyltoluene	98-51-1	6,100 TLV	60000	24	4.2	100
1,4-Butynediol	110-65-6	(d) TOX	(d)	24		
Calcium oxide	1305-78-8	2,000 TLV	2,000	8	1	100
Carbon disulfide	75-15-0	700 RfC	30,000	24	4.2	10
Chlorine	7782-50-5	1,500 TLV	3,000	8	1	100
Chlorine dioxide	10049-04-4	0.2 RfC	300	8	1	100
2-Chloroethyl vinyl ether	110-75-8	(d) TOX	(d)	24		
Cobalt Compounds	7440-48-4	20 TLV	50	24	4.2	100 (p)
Copper Compounds	7440-50-8	1,000 (e) TLV	1,000	8	1	10
Cyanide Compounds	57-12-5	5,000 PEL	5,000	8	1	10
Cyclohexane	110-82-7	1,030,000 TLV	1,050,000	8	1	100
Cyclohexanol	108-93-0	206,000 TLV	200,000	8	1	100
Cyclohexanone	108-94-1	100,000 TLV	100,000	24	4.2	100
Cyclohexylamine	108-91-8	41,000 TLV	40,000	24	4.2	100
Decane	124-18-5	(d) TOX	(d)	8		
Decaborane	17702-41-9	250 TLV	300	24	4.2	100
Diacetone alcohol	123-42-2	238,000 TLV	240,000	24	4.2	100
Dibenzoyl peroxide	95-36-0	(d) TOX	5,000	8	1	100
Dibromochloromethane	124-48-1	(b)	(d)	24		
Dibutyl phthalate	84-74-2	5,000 TLV	5,000	8	1	10
o-Dichlorobenzene	95-50-1	200 (c) RfC	300,000	8	1	100
Dichlorodifluoromethane	75-71-8	200 (c) RfC	4,950,000	24	4.2	10
1,1-Dichloroethane	75-34-3	(b)	810,000	24	4.2	10
1,2-Dichloroethylene	540-59-0	790,000 PEL	790,000	8	1	10
s-Dichlorotetrafluoroethane	76-14-2	6,990,000 TLV	7,000,000	24	4.2	10
Diethanolamine	111-42-2	2,000 TLV	13,000	8	1	100
Diethylamine	109-89-7	15,000 TLV	30,000	24	4.2	100
Diethylamino ethanol	100-37-8	9,600 TLV	47,844.9	8	1	100
Diethylene glycol ethyl ether	111-90-0	(d) TOX	(d)	8		
Dimethyl ammonium chloride	506-59-2	(d) TOX	(d)	24		
Dimethoxymethane	109-87-5	3,100,000 PEL	3,100,000	24	4.2	100

Appendix B

Table 4

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: UPDATED TOXICITY INFORMATION

Contaminant	CAS Number	Basis of Proposed Revised HAAS (ug/m ³)		Threshold Limit Value Associated With Existing HAAS (ug/m ³) (a)	Time Factor	Uncertainty Factor	
Dimethylamine	124-40-3	9,200	TLV	18,000	24	4.2	100
n,n-Dimethyl dodecylamine	112-18-5	(d)	TOX	(d)	24		
Dimethylethanolamine	108-01-0	(d)	TOX	(d)	8		
2,6-Dimethyl-4-heptanone	108-83-8	145,000	TLV	145,000	24	4.2	100
n,n-Dimethyl octadecylamine	124-28-7	(d)	TOX	(d)	24		
1,3-Dioxolane	646-06-0	(d)	TOX	(d)	24		
Diphenylmethane diisocyanate	101-68-8	51	TLV	51	24	4.2	10
Dipropylene glycol	110-98-5	(d)	TOX	(d)	8		
Dipropylene glycol methyl ether	34590-94-8	606,000	TLV	600,000	8	1	100
Dodecylguanidine hydrochloride	13590-97-1	(d)	TOX	(d)	8		
Doxorubicin	23214-92-8	(d)	TOX	(d)	24		
1,2-Epoxy butane	106-88-7	20	RfC	(d)	8		
2-Ethoxyethanol	110-80-5	200	RfC	19,000	24	4.2	100
2-Ethoxyethyl acetate	111-15-9	27,000	TLV	27,000	24	4.2	100
Ethyl acetate	141-78-6	1,400,000	PEL	1,400,000	8	1	10
Ethyl alcohol	64-17-5	1,880,000	TLV	1,880,000	24	4.2	10
Ethylamine	75-04-7	9,200	TLV	18,000	24	4.2	100
Ethyl benzene	100-41-4	1,000	RfC	435,000	8	1	10
Ethyl bromide	74-96-4	22,000	TLV	890,000	8	1	100
Ethyl butyl ketone	106-35-4	230,000	PEL	230,000	8	1	100
Ethylene diamine	107-15-3	25,000	TLV	25,000	24	4.2	100
Ethyl-3-ethoxy propionate	763-69-9	(d)	TOX	(d)	24		
Ethylene glycol	107-21-1	(d)	TOX	125,000	8	1	100
Ethyl ether	60-29-7	1,200,000	PEL	1,200,000	8	1	10
2-Ethyl hexanol	104-76-7	(d)	TOX	(d)	24		
2-Ethylhexyl ester acrylic acid	103-11-7	(d)	TOX	(d)	8		
Ethyl mercaptan	75-8-1	1,300	TLV	1,268	8	1	10
Fluorine	7782-41-4	200	PEL	2,000	8	1	10
Formic acid	64-18-6	9,000	PEL	9,000	8	1	100
Furfural	98-1-1	(b)		8,000	8	1	100
Glutaraldehyde	111-30-8	(d)	TOX	820,000	8	1	100
Glyoxal	107-22-2	(d)	TOX	(d)	24		

Appendix B

Table 4

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: UPDATED TOXICITY INFORMATION

Contaminant	CAS Number	Basis of Proposed Revised HAAS (ug/m3)		Threshold Limit Value Associated With Existing HAAS (ug/m^3) (a)		Time Factor	Uncertainty Factor
Heptane	142-82-5	1,640,000	TLV	1,600,000	8	1	100
Hexamethylene-1-6-diisocyanate	822-6-0	0.01	RfC	34	24	4.2	100
n-Hexane	110-54-3	200	RfC	180,000	24	4.2	10
Hydrogen chloride	7647-1-0	20	RfC	7,000	24	4.2	100
Hydrogen fluoride	7664-39-3	2,450.2	PEL	2,500	24	4.2	10
Hydrogen peroxide	7722-84-1	1,400	TLV	1,500	8	1	100 (p)
Hydrogen sulfide	7783-6-4	1	RfC	14,000	24	4.2	100
Hydroquinone	123-31-9	2,000	TLV	2,000	24	4.2	100 (p)
Iodine	7553-56-2	(d)	TOX	1,000	8	1	100
Iron Compounds	1309-37-1	1,000 (f)	TLV	1,000	24	4.2	10
Isoamyl acetate	123-92-2	525,000	PEL	525,000	8	1	100
Isoamyl alcohol	123-51-3	360,000	PEL	360,000	8	1	100
Isobutyl acetate	110-19-0	700,000	PEL	700,000	8	1	100
Isobutyl alcohol	78-83-1	152,000	TLV	150,000	8	1	100
Isobutyl ester isobutyric acid	97-85-8	(d)	TOX	(d)	24		
Isophorone	78-59-1	(b)		140,000	8	1	100
Isopropyl acetate	108-21-4	950,000	PEL	950,000	8	1	100
Isopropyl alcohol	67-63-0	980,000	PEL	980,000	8	1	10
Isopropylamine	75-31-0	12,000	TLV	12,000	8	1	100
Isopropyl ether	108-20-3	1,040,000	TLV	1,050,000	8	1	100
Kerosene	8008-20-6	100,000	REL	(d)	24	4.2	100
Methoxyethoxyethanol	111-77-3	(d)	TOX	(d)	24		
o-Methoxyphenol	90-5-1	(d)	TOX	(d)	24		
1-Methoxy-2-propanol	107-98-2	(d)	TOX	360,000	8	1	100
Methyl acetate	79-20-9	606,000	TLV	610,000	24	4.2	100
Methyl alcohol	67-56-1	260,000	PEL	260,000	24	4.2	10
Methylamine	74-89-5	6,400	TLV	12,000	8	1	100
p-Methylaminophenol sulfate	55-55-0	(d)	TOX	(d)	24		
Methyl amyl ketone	110-43-0	233,000	TLV	233,000	8	1	100
Methylcyclohexanol	25639-42-3	234,000	TLV	235,000	24	4.2	100
Methyl ester salicylic acid		(d)	TOX	(d)	24		
Methyl ethyl ketone	78-93-3	1,000	RfC	590,000	8	1	100
Methyl ethyl ketone peroxide	1338-23-4	(d)	TOX	1,500	8	1	100

Appendix B

Table 4

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: UPDATED TOXICITY INFORMATION

Contaminant	CAS Number	Basis of Proposed Revised HAAS (ug/m3)		Threshold Limit Value Associated With Existing HAAS (ug/m^3)	(a)	Time Factor	Uncertainty Factor
Methyl isoamyl ketone	110-12-3	234,000	TLV	234,000	8	1	100
Methyl isobutyl ketone	108-10-1	80 (c)	RFc	205,000	24	4.2	100
Methyl methacrylate	80-62-6	410,000	TLV	410,000	8	1	10
3-Methyl-2-oxazolidone	19836-78-3	(d)	TOX	(d)	8		
1-Methyl-2-pyrrolidone	872-50-4	(d)	TOX	403,200	24	4.2	100
Mineral Spirits	8030-30-6	(d)	TOX	(g)	24		
Morpholine	110-91-8	70,000	PEL	71,118.4	8	1	100
Nitric acid	7697-37-2	5,000	PEL	5,000	8	1	10
Nitric oxide	10102-43-9	30,000	PEL	30,000	24	4.2	100
Nitrobenzene	98-995-3	(b)		5,000	24	4.2	10
p-Nitrochlorobenzene	100-0-5	640	TLV	3,000	24	4.2	10 (p)
Nitroethane	79-24-3	307,000	TLV	310,000	24	4.2	100
Nitromethane	75-52-5	50,000	TLV	250,000	8	1	100
1-Nitropropane	108-3-2	90,000	PEL	90,000	8	1	100
1-Nitrotoluene	78-72-5	11,000	TLV	11,000	24	4.2	10
Oxalic acid	144-62-7	1,000	TLV	1,000	8	1	10
1-Pentanol	71-41-0	(d)	TOX	(d)	24		
2-Pentanone	107-87-9	700,000	PEL	705,000	24	4.2	100
Perchloric acid	7601-90-3	(d)	TOX	(d)	24		
Phenol	108-95-2	19,000	TLV	19,000	8	1	10
Phenoxyethanol	122-99-6	(d)	TOX	(d)	24		
Phenyl ether	101-84-8	7,000 (h)	TLV	7,000	8	1	10
1-Phenyl-3-pyrazolidone	92-43-3	(d)	TOX	(d)	24		
Phosgene	75-44-5	400	TLV	400	8	1	10
Phosphine	7803-51-2	0.3	RFc	400	8	1	10
Phosphoric acid	7664-38-2	10	RFc	1,000	8	1	10
Phosphorus pentachloride	10026-13-8	850	TLV	1,000	8	1	100
Phosphorous pentasulfide	1314-80-3	1,000	TLV	1,000	8	1	100
Phosphorous trichloride	7719-12-2	1,100	TLV	1,500	8	1	100
Phthalic anhydride	85-44-9	120 (j)	RFc	6,000	8	1	10
Picric acid	88-89-1	100	TLV	100	24	4.2	100
Platinum Compounds	7440-06-4	2 (j)	TLV	2	24	4.2	100

Appendix B

Table 4

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: UPDATED TOXICITY INFORMATION

Contaminant	CAS Number	Basis of Proposed Revised HAAS (ug/m3)		Threshold Limit Value Associated With Existing HAAS (ug/m^3) (a)		Time Factor	Uncertainty Factor
Potassium hydroxide	1310-58-2	2,000	REL	2,000	8	1	100
1,2-Propanediol	57-55-6	(d)	TOX	(d)	24		
2-Propoxyethanol	2807-30-9	(d)	TOX	(d)	8		
Propoxypropanol	1569-1-3	(d)	TOX	(d)	24		
n-Propyl acetate	109-60-4	835,000	TLV	835,000	8 (o)	1	100
n-Propyl alcohol	71-23-8	492,000	TLV	500,000	8	1	10
1,2-Propylene carbonate	108-32-7	(d)	TOX	(d)	8		
Sebacic acid	11-20-6	(d)	TOX	(d)	8		
Sodium hydroxide	1310-73-2	50	PEL	2,000	8	1	100
Sodium tripolyphosphate	7758-29-4	(d)	TOX	(d)	24		
Sulfuric acid	7664-93-9	70 (k)	RfC	1,000	24	4.2	10
Sulfur monochloride	10025-67-9	6,000	PEL	6,000	8	1	10
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	4,170,000	TLV	4,170,000	24	4.2	100
Tetrahydrofuran	109-99-9	590,000	TLV	590,000	24	4.2	10
Texanol	25265-77-4	(d)	TOX	(d)	24		
Titanium dioxide	13463-67-7	10,000	TLV	10,000	24	4.2	10 (p)
Toluene	108-88-3	400	RfC	375,000	24	4.2	10
Toluene-2,4-diisocyanate	584-84-9	0.07 (l)	RfC	40	24	4.2	100 (p)
p-Toluenesulfonic acid	88-20-0	(d)	TOX	(d)	24		
1,1,1-Trichloroethane	71-55-6	1,900,000	PEL	1,900,000	8	1	10
Trichlorofluoromethane	75-69-4	700 (c)	RfC	5,607,346.9	24	4.2	10
1,2,3-Trichloropropane	96-18-4	(b)		60,000	24	4.2	1000
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	30000 (i)	RfC	7,600,000	24	4.2	10
2,4,6-Tri(dimethyl aminomethyl)phenol	90-72-2	(d)	TOX	(d)	24		
Triethanolamine	102-71-6	5,000	TLV	(d)	24	4.2	100
Triethyl ester phosphoric acid	78-40-0	(d)	TOX	(d)	24		
Triethyl orthoformate	122-51-0	(d)	TOX	(d)	24		
s,s,s-Trimethyl ester phosphorotriithic acid	150-50-5	(d)	TOX	(d)	24		
Triorthocresyl phosphate	78-30-8	100	TLV	100	24	4.2	100

Appendix B

Table 4

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: UPDATED TOXICITY INFORMATION

Contaminant	CAS Number	Basis of Proposed Revised HAAS (ug/m3)	Threshold Limit Value Associated With Existing HAAS (ug/m^3) (a)	Time Factor	Uncertainty Factor
Turpentine	8006-64-2	556,000 TLV	556,000 24	4.2	100
4-Undecanol,7-ethyl-2-methyl-hydrogen sulfate	139-88-8	(d) TOX	(d) 24		
Vanadium Compounds		50 (m) TLV	50 24	4.2	10
Vinyl acetate	108-5-4	(b)	35,138.8 8	1	100
Vinyl toluene	25013-15-4	242,000 TLV	240,000 24	4.2	10
VM & P naphtha	8032-32-4	1,370,000 TLV	1,350,000 24	4.2	100 (p)
Zinc chloride	7646-85-7	1,000 (n) TLV	1,000 24	4.2	100
Zinc Compounds	7440-66-6	(d) TOX	5,000 24	4.2	100

Notes:

ACGIH - American Conference of Governmental Industrial Hygienists

CAS - Chemical Abstract System

HAAS - Hazardous Ambient Air Standard in micrograms compound per cubic meter of ambient air

HEAST - Health Effects Assessment Summary Tables. US EPA. July 1997.

NIOSH - National Institute for Occupational Safety and Health

PEL - Permissible Exposure Limit established by federal Occupational Safety and Health Administration (OSHA), downloaded September 29, 1997.

REL - Recommended Exposure Limit established by federal National Institute for Occupational Safety and Health (NIOSH), June 1994.

RfC - Inhalation Reference Concentration

TLV - Threshold Limit Value as cited in 1997 Threshold Limit Values for Chemical Substances and Physicals Agents and Biological Indices, ACGIH.

TOX - Derived based upon available toxicity information.

(a) - Averaging period

(b) - Compound now meets Category I criteria. Please see Appendix B Table 1 for proposed revised HAAS.

(c) - Value presented in Table 2 of HEAST. Caveat: Derived from methodology that isn't current with the interim inhalation methodology used by the RfD/RfC workgroup.

(d) - HAAS derived based on available toxicity information.

(e) - ACGIH cites 1,000 ug/cubic meter for dusts and mists.

(f) - ACGIH cites 1,000 ug/cubic meter for soluble iron salts.

(g) - Due to similarities, values for VM & P naphtha used as surrogates.

(h) - ACGIH value cited for phenyl ether vapor.

(i) - Value cited in Table 1 of HEAST July 1997.

(j) - ACGIH cites 2 ug/cubic meter for soluble salts.

(k) - Reported effects occurred at portal of entry therefore value represents an acceptable air concentration.

(l) - Value derived for a mixture of 2,4 and 2,6 toluene diisocyanate.

(m) - ACGIH value for vanadium pentoxide respirable fume or dust.

(n) - ACGIH value cited for zinc chloride fumes.

(o) - Incorrect averaging period of 24 hours currently listed in Regulations.

(p) - Proposed revised HAAS includes extra uncertainty factor of ten because compound is identified as potential carcinogen by ACGIH or NIOSH.

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20-Feb-98

APPENDIX B

TABLE 5

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: PROPOSED REVISED HAZARDOUS AMBIENT AIR STANDARDS

Contaminant	CAS Number	Proposed Revised HAAS (ug/m3)	Existing HAAS * (a)
Acetaldehyde	75-7-0	(b)	1,800 8
Acetic acid	64-19-7	250 (c)	250 8
Acetic anhydride	108-24-7	200 (c)	200 8
Acetone	67-64-1	118,800 (c)	178,000 8
Acetonitrile	75-05-8	50 (d)	7,000 8
Acrolein	107-02-8	(b)	2.5 8
2-Amino-2-methyl-1-propanol	124-68-5	65 (e)	65 24
Ammonia	7664-41-7	100 (d)	1,800 8
Ammonium sulfamate	7773-06-0	23.8 (c)	23.8 24
n-Amyl acetate	628-63-7	52,500 (c)	53,000 8
s-Amyl acetate	626-38-0	65,000 (c)	66,500 8
Antimony Compounds	7440-36-0	50 (c)	50 8
1-2-Benzenedicarboxylic acid	88-99-3	357 (e)	357 24
Benzyl alcohol	100-51-6	10 (e)	10 8
Bisphenol A resin	80-5-7	210 (e)	210 24
Bromodichloromethane	75-27-4	(b)	42 24
2-Butoxyethanol	111-76-2	12,100 (c)	12,000 8
Butoxyethyl acetate	112-07-2	330 (c)	270 8
2-(2-Butoxyethoxy)-ethanol	112-34-5	300 (e)	300 24
n-Butyl acetate	123-86-4	7,100 (c)	7,100 8
s-Butyl acetate	105-46-4	95,000 (c)	95,000 8
t-Butyl acetate	540-88-5	95,000 (c)	95,000 8
n-Butyl alcohol	71-36-3	714.3 (c)	360 24
s-Butyl alcohol	78-92-2	3,050 (c)	3,050 8
t-Butyl alcohol	75-65-0	3,000 (c)	3,000 8

APPENDIX B

TABLE 5

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: PROPOSED REVISED HAZARDOUS AMBIENT AIR STANDARDS

Contaminant	CAS Number	Proposed Revised HAAS (ug/m3)	Existing HAAS * (a)
Butylamine	109-73-9	150 (e)	150 8
Butyl propasol	5131-66-8	142 (e)	142 24
p-t-Butyltoluene	98-51-1	14.5 (c)	143 24
1,4-Butynediol	110-65-6	0.1 (e)	0.10 24
Calcium oxide	1305-78-8	20 (c)	20 8
Carbon disulfide	75-15-0	700 (d)	714 24
Chlorine	7782-50-5	15 (c)	30 8
Chlorine dioxide	10049-04-4	0.2 (d)	3 8
2-Chloroethyl vinyl ether	110-75-8	1 (e)	1 24
Cobalt Compounds	7440-48-4	0.005 (c,g)	0.12 24
Copper Compounds	7440-50-8	100 (c)	100 8
Cyanide Compounds	57-12-5	500 (c)	500 8
Cyclohexane	110-82-7	10,300 (c)	10,500 8
Cyclohexanol	108-93-0	2,060 (c)	2,000 8
Cyclohexanone	108-94-1	238.1 (c)	240 24
Cyclohexylamine	108-91-8	97.6 (c)	95 24
Decane	124-18-5	1,300 (e)	1,300 8
Decaborane	17702-41-9	0.60 (c)	0.71 24
Diacetone alcohol	123-42-2	566.7 (c)	565 24
Dibenzoyl peroxide	95-36-0	50 (e)	50 8
Dibromochloromethane	124-48-1	(b)	39 24
Dibutyl phthalate	84-74-2	500 (c)	500 8
o-Dichlorobenzene	95-50-1	200 (d)	3,000 8
Dichlorodifluoromethane	75-71-8	200 (d)	118 24
1,1-Dichloroethane	75-34-3	(b)	19,300 24
1,2-Dichloroethylene	540-59-0	55,400 (f)	79,000 8
s-Dichlorotetrafluoroethane	76-14-2	166,429 (c)	167,000 24
Diethanolamine	111-42-2	20 (c)	130 8
Diethylamine	109-89-7	35.7 (c)	71.4 24
Diethylamino ethanol	100-37-8	96 (c)	480 8
Diethylene glycol ethyl ether	111-90-0	297 (e)	297 8
Dimethyl ammonium chloride	506-59-2	49 (e)	49 24
Dimethoxymethane	109-87-5	7,380 (c)	7,380 24

APPENDIX B

TABLE 5

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: PROPOSED REVISED HAZARDOUS AMBIENT AIR STANDARDS

Contaminant	CAS Number	Proposed Revised HAAS (ug/m3)	Existing HAAS * (a)
Dimethylamine	124-40-3	21.9 (c)	42.9 24
n,n-Dimethyl dodecylamine	112-18-5	63 (e)	63 24
Dimethylethanolamine	108-01-0	27 (e)	27 8
2,6-Dimethyl-4-heptanone	108-83-8	345.2 (c)	345 24
n,n-Dimethyl octadecylamine	124-28-7	5.5 (e)	5.5 24
1,3-Dioxolane	646-06-0	92 (e)	92 24
Diphenylmethane diisocyanate	101-68-8	1.2 (c)	0.48 24
Dipropylene glycol	110-98-5	1,680 (e)	1,680 8
Dipropylene glycol methyl ether	34590-94-8	6,060 (c)	6,000 8
Dodecylguanidine hydrochloride	13590-97-1	0.6 (e)	0.6 8
Doxorubicin	23214-92-8	115 (e)	115 24
1,2-Epoxy butane	106-88-7	20 (d)	11 8
2-Ethoxyethanol	110-80-5	200 (d)	45.2 24
2-Ethoxyethyl acetate	111-15-9	64.3 (c)	64.3 24
Ethyl acetate	141-78-6	140,000 (c)	140,000 8
Ethyl alcohol	64-17-5	44,770 (c)	44,770 24
Ethylamine	75-04-7	21.9 (c)	42.9 24
Ethyl benzene	100-41-4	1,000 (d)	43,500 8
Ethyl bromide	74-96-4	220 (c)	8,900 8
Ethyl butyl ketone	106-35-4	2,300 (c)	2,300 8
Ethylene diamine	107-15-3	59.5 (c)	60 24
Ethyl-3-ethoxy propionate	763-69-9	230 (e)	230 24
Ethylene glycol	107-21-1	1,270 (e)	1,270 8
Ethyl ether	60-29-7	120,000 (c)	120,000 8
2-Ethyl hexanol	104-76-7	130 (e)	130 24
2-Ethylhexyl ester acrylic acid	103-11-7	29 (e)	29 8
Ethyl mercaptan	75-8-1	130 (c)	125 8
Fluorine	7782-41-4	20 (c)	200 8
Formic acid	64-18-6	90 (c)	90 8
Furfural	98-1-1	(b)	80 8
Glutaraldehyde	111-30-8	8,200 (e)	8,200 8
Glyoxal	107-22-2	130 (e)	130 24

APPENDIX B

TABLE 5

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: PROPOSED REVISED HAZARDOUS AMBIENT AIR STANDARDS

Contaminant	CAS Number	Proposed Revised HAAS (ug/m3)	Existing HAAS * (a)
Heptane	142-82-5	16,400 (c)	16,000 8
Hexamethylene-1-6-diisocyanate	822-6-0	0.01 (d)	0.082 24
n-Hexane	110-54-3	200 (d)	4,290 24
Hydrogen chloride	7647-1-0	20 (d)	16.7 24
Hydrogen fluoride	7664-39-3	58.3 (c)	59.5 24
Hydrogen peroxide	7722-84-1	1.4 (c,g)	15 8
Hydrogen sulfide	7783-6-4	1.0 (d)	33.3 24
Hydroquinone	123-31-9	0.48 (c,g)	4.8 24
Iodine	7553-56-2	10 (e)	100 (i) 8
Iron Compounds	1309-37-1	24 (c)	24 24
Isoamyl acetate	123-92-2	5,250 (c)	5,250 8
Isoamyl alcohol	123-51-3	3,600 (c)	3,600 8
Isobutyl acetate	110-19-0	7,000 (c)	7,000 8
Isobutyl alcohol	78-83-1	1,520 (c)	1,500 8
Isobutyl ester isobutyric acid	97-85-8	580,780 (e)	580,780 24
Isophorone	78-59-1	(b)	1,400 8
Isopropyl acetate	108-21-4	9,500 (c)	9,500 8
Isopropyl alcohol	67-63-0	98,000 (c)	98,000 8
Isopropylamine	75-31-0	120 (c)	120 8
Isopropyl ether	108-20-3	10,400 (c)	10,500 8
Kerosene	8008-20-6	238 (c)	51,000 24
Methoxyethoxyethanol	111-77-3	595 (e)	595 24
o-Methoxyphenol	90-5-1	47 (e)	47 24
1-Methoxy-2-propanol	107-98-2	3,600 (e)	3,600 8
Methyl acetate	79-20-9	1,443 (c)	1,450 24
Methyl alcohol	67-56-1	6,190 (c)	6,190 24
Methylamine	74-89-5	64 (c)	120 8
p-Methylaminophenol sulfate	55-55-0	5,100 (e)	5,100 24
Methyl amyl ketone	110-43-0	2,330 (c)	2,330 8
Methylcyclohexanol	25639-42-3	557.1 (c)	560 24
Methyl ester salicylic acid		180 (e)	180 24
Methyl ethyl ketone	78-93-3	1,000 (d)	5,900 8
Methyl ethyl ketone peroxide	1338-23-4	15 (e)	15 8

APPENDIX B

TABLE 5

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: PROPOSED REVISED HAZARDOUS AMBIENT AIR STANDARDS

Contaminant	CAS Number	Proposed Revised HAAS (ug/m3)	Existing HAAS * (a)
Methyl isoamyl ketone	110-12-3	2,340 (c)	2,400 8
Methyl isobutyl ketone	108-10-1	80 (d)	490 24
Methyl methacrylate	80-62-6	41,000 (c)	41,000 8
3-Methyl-2-oxazolidone	19836-78-3	57 (e)	57 8
1-Methyl-2-pyrrolidone	872-50-4	960 (e)	960 24
Mineral Spirits	8030-30-6	3,210 (e)	3,210 24
Morpholine	110-91-8	700 (c)	700 8
Nitric acid	7697-37-2	500 (c)	500 8
Nitric oxide	10102-43-9	71.4 (c)	71.4 24
Nitrobenzene	98-995-3	(b)	119 24
p-Nitrochlorobenzene	100-0-5	1.5 (c,g)	71.4 24
Nitroethane	79-24-3	731 (c)	738 24
Nitromethane	75-52-5	500 (c)	2,500 8
1-Nitropropane	108-3-2	900 (c)	900 8
1-Nitrotoluene	78-72-5	261.9 (c)	262 24
Oxalic acid	144-62-7	100 (c)	100 8
1-Pentanol	71-41-0	120 (e)	120 24
2-Pentanone	107-87-9	1,667 (c)	1,680 24
Perchloric acid	7601-90-3	50 (e)	50 24
Phenol	108-95-2	1,900 (c)	1,900 8
Phenoxyethanol	122-99-6	81 (e)	81 24
Phenyl ether	101-84-8	700 (c)	700 8
1-Phenyl-3-pyrazolidone	92-43-3	13 (e)	13 24
Phosgene	75-44-5	40 (c)	40 8
Phosphine	7803-51-2	0.3 (d)	40 8
Phosphoric acid	7664-38-2	10 (d)	100 8
Phosphorus pentachloride	10026-13-8	8.5 (c)	10 8
Phosphorous pentasulfide	1314-80-3	10 (c)	10 8
Phosphorous trichloride	7719-12-2	11 (c)	15 8
Phthalic anhydride	85-44-9	120 (d)	600 8
Picric acid	88-89-1	0.24 (c)	0.24 24
Platinum Compounds	7440-06-4	0.005 (c)	0.005 24

APPENDIX B

TABLE 5

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: PROPOSED REVISED HAZARDOUS AMBIENT AIR STANDARDS

Contaminant	CAS Number	Proposed Revised HAAS (ug/m3)	Existing HAAS * (ug/m^3) (a)
Potassium hydroxide	1310-58-2	20 (c)	20 8
1,2-Propanediol	57-55-6	1,300 (e)	1,300 24
2-Propoxyethanol	2807-30-9	4.3 (e)	4.3 8
Propoxypropanol	1569-1-3	210 (e)	210 24
n-Propyl acetate	109-60-4	8,350 (c)	8,350 24
n-Propyl alcohol	71-23-8	49,200 (c)	50,000 8
1,2-Propylene carbonate	108-32-7	1,260 (e)	1,260 8
Sebacic acid	11-20-6	268 (e)	268 8
Sodium hydroxide	1310-73-2	0.5 (c)	20 8
Sodium tripolyphosphate	7758-29-4	84 (e)	84 24
Sulfuric acid	7664-93-9	70 (d,h)	23.8 24
Sulfur monochloride	10025-67-9	600 (c)	600 8
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	9,929 (c)	9,930 24
Tetrahydrofuran	109-99-9	14,048 (c)	14,050 24
Texanol	25265-77-4	207 (e)	207 24
Titanium dioxide	13463-67-7	2.38 (c,g)	240 24
Toluene	108-88-3	400 (d)	8,930 24
Toluene-2,4-diisocyanate	584-84-9	0.007 (d,g)	0.1 24
p-Toluenesulfonic acid	88-20-0	113 (e)	113 24
1,1,1-Trichloroethane	71-55-6	190,000 (c)	190,000 8
Trichlorofluoromethane	75-69-4	700 (d)	133,500 24
1,2,3-Trichloropropane	96-18-4	(b)	14.3 24
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	30,000 (d)	181,000 24
2,4,6-Tri(dimethyl aminomethyl)phenol	90-72-2	78 (e)	78 24
Triethanolamine	102-71-6	11.9 (c)	400 24
Triethyl ester phosphoric acid	78-40-0	970 (e)	970 24
Triethyl orthoformate	122-51-0	190 (e)	190 24
s,s,s-Trimethyl ester phosphorotriethic acid	150-50-5	78 (e)	78 24
Triorthocresyl phosphate	78-30-8	0.24 (c)	0.24 24

APPENDIX B

TABLE 5

Discussed in Section II.C.2

CATEGORY III CONTAMINANTS: PROPOSED REVISED HAZARDOUS AMBIENT AIR STANDARDS

Contaminant	CAS Number	Proposed Revised HAAS (ug/m3)	Existing HAAS * (ug/m^3) (a)
Turpentine	8006-64-2	1,324 (c)	1,300 24
4-Undecanol,7-ethyl-2-methyl-hydrogen sulfate	139-88-8	13 (e)	13 24
Vanadium Compounds		1.2 (c)	1.2 24
Vinyl acetate	108-5-4	(b)	350 8
Vinyl toluene	25013-15-4	5,762 (c)	5,710 24
VM & P naphtha	8032-32-4	326 (c,g)	3,210 24
Zinc chloride	7646-85-7	2.4 (c)	2.4 24
Zinc Compounds	7440-66-6	12 (e)	12 24

Notes:

Indicates compound where proposed HAAS differs by an order of magnitude or more from existing HAAS.

ACGIH - American Conference of Governmental Industrial Hygienists

CAS - Chemical Abstract System

HAAS - Hazardous Ambient Air Standard in micrograms compound per cubic meter of ambient air

HEAST - Health Effects Assessment Summary Tables. US EPA. July 1997.

NIOSH - National Institute for Occupational Safety and Health

* - Existing values were derived either by adjusting occupational Threshold Limit Value or based on available toxicity information.

(a) - Averaging period

(b) - Compound now meets Category I criteria. Please see Appendix B Table 1 for proposed revised HAAS.

(c) - Value based on adjusted occupational standard:uses most conservative of available compound specific Threshold Limit Value, Permissible Exposure Limit or Recommended Exposure Limit.

(d) - Value based on inhalation reference concentration.

(e) - Value derived based on available toxicity information.

(f) - Eight hour Acute Exposure Guideline Level of 55,400 ug/m^3 is used as proposed HAAS to protect some sensitive individuals that may experience dizziness if exposed to existing standard for a prolonged period of time.

(g) - Proposed revised HAAS includes extra uncertainty factor of ten because compound is identified as potential carcinogen by ACGIH or NIOSH.

(h) - Reported effects occurred at portal of entry therefore value represents an acceptable air concentration (HEAST, July, 1997).

(i) - Value improperly calculated. Correct value should be 10.