



# ***Don H. Mahaffey Drilling Co.***

---

**AIRBORNE CONTAMINANTS**

---



YOUR OSHA COMPLIANCE SOLUTION

---

Questions? Call 1-800-734-3574



## TABLE OF CONTENTS

Section	Page
<b>1 OBJECTIVE .....</b>	<b>1</b>
<b>2 ADMINISTRATOR .....</b>	<b>1</b>
<b>3 AIRBORNE CONTAMINANTS, AN EXPLANATION OF .....</b>	<b>1</b>
3.1 Airborne Contaminants .....	1
3.2 Where Are Airborne Contaminants Found?.....	1
3.3 Methods of Exposure .....	2
3.4 Illnesses and Other Diseases .....	2
<b>4 EXPOSURE LIMITS.....</b>	<b>2</b>
4.1 Permissible Exposure Limits (PELs) .....	2
4.2 Short Term Limits.....	2
<b>5 WORKPLACE MONITORING/ RISK ASSESSMENT .....</b>	<b>3</b>
<b>6 EXPOSURE CONTROL.....</b>	<b>3</b>
6.1 Engineering Controls .....	3
6.2 Administrative Controls .....	3
6.3 Work Practices and Prevention .....	4
6.4 Control by Respiratory Protective Equipment.....	4
6.5 Skin Notation and Protective Clothing.....	4
6.6 Other Personal Protective Equipment .....	4
<b>7 MEDICAL SURVEILLANCE .....</b>	<b>4</b>
<b>8 TRAINING.....</b>	<b>4</b>
<b>9 RECORDKEEPING.....</b>	<b>5</b>
<b>APPENDIX 1 – DEFINITIONS .....</b>	<b>6</b>
<b>APPENDIX 2 – COMPUTATIONS FOR EXPOSURES TO CONTAMINANTS .....</b>	<b>7</b>
<b>APPENDIX 3 – PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS .....</b>	<b>9</b>

## 1 OBJECTIVE

Don H. Mahaffey Drilling Co. has adopted this program to establish the general requirements and procedures for controlling employee exposure to airborne contaminants and skin contact with those substances which are readily absorbed through the skin and are designated by the "S" notation in Appendix 3: Permissible Exposure Limits for Chemical Contaminants.

This program is designed to correlate with the regulations set forth under the California Code of Regulations, Title 8, 5155 – Airborne Contaminants. The provisions of this program do not supersede established regulations for airborne contaminants with exclusive regulations.

## 2 ADMINISTRATOR

Ashley Mahaffey Tullius has been designated as the administrator for this program. Ashley Mahaffey Tullius will be responsible for:

- a. Identifying work areas that could expose employees to potentially harmful levels of airborne contaminants;
- b. Ensuring that employees use the required protection when an airborne contaminant exposure equals or exceeds its permissible exposure limits;
- c. Ensuring that exposed employees receive training about airborne contaminants;
- d. Arrange for oversight of medical surveillance, when applicable; and
- e. Maintain documentation/records of airborne contaminant activities.

## 3 AIRBORNE CONTAMINANTS, AN EXPLANATION OF

### 3.1 Airborne Contaminants

Airborne contaminants are contaminants in the form of a fume, mist, gas, vapor, or dust and may include microorganisms. An airborne contaminant can potentially be a harmful substance that is either not naturally in the air or is present in an unnaturally high concentration and to which workers may be exposed in their working environment.

### 3.2 Where Are Airborne Contaminants Found?

Depending on the type of airborne contaminant, they can be found in a variety of areas and/or as an outcome of an operation, such as, but not limited to:

- Working in confined spaces;
- Working in tunnels, shafts, etc.;
- Sanding wood surfaces;
- Grinding metals;
- Crushing rocks;
- Arc welding;
- Painting/Spray painting;
- Firefighting;
- Working with combustibles;
- Trenching and excavating;
- Working with gases;
- Food and meat processing;
- Working with chemicals (laboratories); and
- Working with/around the ill (healthcare).

### 3.3 Methods of Exposure

Exposure to harmful airborne contaminants in the workplace can occur through inhalation, absorption through the skin or ingestion. Most exposure occurs through the inhalation of vapors, dusts, fumes or gases.

### 3.4 Illnesses and Other Diseases

Overexposure to harmful airborne contaminants can cause a variation of occupational illness, disease, temporary, and permanent disabilities depending on the level and duration of exposure, such as, but not limited to:

- a. Cancer;
- b. Asthma;
- c. Allergies;
- d. Irritation;
- e. Respiratory damage;
- f. Other organ damage(s); or even
- g. Death.

## 4 EXPOSURE LIMITS

### 4.1 Permissible Exposure Limits (PELs)

- 4.1.1 An employee exposure to an airborne contaminant in a workday, expressed as an 8-hour TWA concentration, will not exceed the PEL specified for the substance in Appendix 3.
- 4.1.2 When substances have additive health effects as described in Section B of Appendix 2, the value of D will not exceed unity.

### 4.2 Short Term Limits

- 4.2.1 Short Term Exposure Limit  
An employee exposure to an airborne contaminant, expressed as a 15-minute time-weighted average concentration, will not exceed the STEL specified for the substance in Appendix 3 at any time during the workday. If another averaging period is indicated in the footnotes to Appendix 3, the time-weighted average exposure over that time period will not exceed the specified STEL at any time during the workday.
- 4.2.2 All Other Substances without a Ceiling Limit  
Employee exposure to concentrations above the PEL will be controlled so as to prevent harmful effects such as narcosis, significant irritation of the eyes, skin or respiratory tract or chronic or irreversible tissue change.

*Note: Such substances are not known to cause adverse effects if the maximum concentration of exposure is limited in accordance with the following guidelines:*

PEL Value* (From Appendix 3)	Multiplication Factor for Maximum Concentration
0 to 1	3
>1 to 10	2
>10	1.5

\*Use ppm value unless the concentration is only expressed in mg/M<sup>3</sup>.

#### 4.2.3 Ceiling Limits

Employee exposures will be controlled such that the applicable ceiling limit specified in Appendix 3 for any airborne contaminant is not exceeded at any time.

## 5 WORKPLACE MONITORING/ RISK ASSESSMENT

- 5.1 Whenever it is reasonable to suspect that employees may be exposed to concentrations of airborne contaminants in excess of levels permitted in Section 3, the work environment will be monitored so that exposures to employees can be measured or calculated.
- 5.2 When exposures to airborne contaminants are found or are expected to exceed allowable levels, measures to control such harmful exposures will be instituted in accordance with California Code of Regulations, Title 8, Section 5141 (Control of Harmful Exposure to Employees).
- 5.3 For the adequate protection of employees, the person supervising, directing or evaluating the monitoring and control methods will be versed in this program and will be competent in industrial hygiene practice.

*NOTE: To facilitate the detection of conditions leading to serious overexposures, the screening of the work environment by any Don H. Mahaffey Drilling Co.-authorized person, using appropriate measuring devices, is encouraged.*

- 5.4 All monitoring results will be recorded, and such records will be retained in accordance with California Code of Regulations, Title 8, Section 3204.

## 6 EXPOSURE CONTROL

### 6.1 Engineering Controls

Harmful exposures will be prevented by engineering controls whenever feasible.

### 6.2 Administrative Controls

Whenever engineering controls are not feasible or do not achieve full compliance, administrative controls will be implemented if practicable.

### **6.3 Work Practices and Prevention**

When practical, effective work practices will be implemented to reduce and/or prevent exposure to harmful substances.

### **6.4 Control by Respiratory Protective Equipment**

Respiratory protective equipment, in accordance with Cal/OSHA §5144, will be used to prevent harmful exposures as follows:

- a. During the time period necessary to install or implement feasible engineering controls;
- b. Where feasible engineering controls and administrative controls fail to achieve full compliance; and
- c. In emergencies.

### **6.5 Skin Notation and Protective Clothing**

The substances designated by “S” in the skin notation column of Appendix 3 may be absorbed into the bloodstream through the skin, the mucous membranes and/or the eye and contribute to the overall exposure. Appropriate protective clothing will be provided for and used by employees as necessary to prevent skin absorption.

### **6.6 Other Personal Protective Equipment**

The above sections will not interfere with Don H. Mahaffey Drilling Co.’s responsibility to provide appropriate protection from corrosive or skin irritating materials which may not bear the “S” designation on table found in Appendix 3.

## **7 MEDICAL SURVEILLANCE**

A medical surveillance program approved by the Division may be required to ensure satisfactory maintenance of employee health and to ascertain the effectiveness of the control method(s).

## **8 TRAINING**

When required, affected employees will be provided with adequate information and training for competency and understanding in the characteristics and means of identifying hazard(s), such as airborne contaminants, and the required safeguards to protect them from the effects of said hazard(s).

## **9 RECORDKEEPING**

When required, records pertaining to airborne contaminants will be maintained and retained for the duration required, such as:

- a. Exposure assessment records;
- b. Method of monitoring and monitoring results;
- c. Training records; and
- d. Medical surveillance records.



## APPENDIX 1 – DEFINITIONS

**Ceiling limit** – the maximum concentration of an airborne contaminant to which an employee may be exposed at any time.

**Eight-hour time-weighted average concentration (TWA)** – an employee's exposure, as measured or calculated by the formula in Appendix 2, to an airborne contaminant during a workday.

**Permissible exposure limit (PEL)** – the maximum permitted 8-hour time-weighted average concentration of an airborne contaminant.

**Short term exposure limit (STEL)** – a 15-minute time-weighted average exposure which is not to be exceeded at any time during a workday even if the 8-hour time-weighted average is below the PEL. An averaging period other than 15 minutes may be specified in the footnotes at the end of Appendix 3 (Permissible Exposure Limits for Chemical Contaminants).

## APPENDIX 2 – COMPUTATIONS FOR EXPOSURES TO CONTAMINANTS

### A. COMPUTATION FOR EXPOSURES TO CONTAMINANTS WITH INDEPENDENTS HEALTH EFFECTS

The 8-hour time-weighted average concentration (TWA) of a single substance to which an individual is exposed during a workday will be calculated using the following formula to determine compliance with the PEL specified in Appendix 3.

$$TWA = \frac{C_1T_1 + C_2T_2 + \dots C_nT_n}{8^*}$$

Where T is the duration in hours of the exposure to a substance at the concentration C. For multiple substances with independent health effects, an independent comparison of each TWA with the corresponding PEL will be made to determine compliance.

\*Note: Eight (8) is used as denominator regardless of total hours of workday.

EXAMPLE: To illustrate the use of this formula, assume Substance A has an 8-hour time weighted average permissible exposure limit of 100 ppm noted in Table AC-1 and an employee is exposed to an airborne concentration of Substance A of 150 ppm for 2 hours, 75 ppm for 3 hours, and 50 ppm for 4 hours during a 9-hour workday:

$$TWA = [(150 \times 2) + (75 \times 3) + (50 \times 4)]/8^* = 91 \text{ ppm.}$$

The series of exposures in this example are equivalent to an 8-hour exposure at a concentration of 91 ppm which is below the PEL value of 100 ppm specified for Substance A.

### B. COMPUTATION FOR EXPOSURES TO CONTAMINANTS WITH ADDITIVE HEALTH EFFECTS

In the absence of information to the contrary, the adverse health effects of exposure to two or more toxic materials during the workday will be considered additive and the following formula will be used for calculating D, the fraction of the allowable daily exposure.

$$D = \frac{TWA_1}{PEL_1} + \frac{TWA_2}{PEL_2} + \dots \frac{TWA_n}{PEL_n}$$

Where TWA is the time-weighted average concentration of a particular substances involved in the exposure (as calculated by the formula in Section (A) of this Appendix), and PEL is the corresponding permissible exposure limit for that substance as specified by Table AC-1. The value of D will not exceed unity.

Example: To illustrate the use of this formula, consider the following exposures:

<i>Substance</i>	<i>Actual 8-hour TWA exposure concentration (ppm)</i>	<i>8-hour weighted average permissible exposure limit (PEL) (ppm)</i>
<i>1</i>	<i>500</i>	<i>1,000</i>
<i>2</i>	<i>45</i>	<i>200</i>
<i>3</i>	<i>40</i>	<i>200</i>

Substituting in the formula:

$$D = \frac{500}{1000} + \frac{45}{200} + \frac{40}{200} = 0.925$$

Since D is less than unity (1), the exposure to multiple contaminants is within acceptable limits.

Health effects for multiple contaminants are not considered additive when different organs of the body are affected by individual substances, or where the same effect (such as narcosis) is produced by two substances but the PEL for one substance is based on another effect. For example, vinyl chloride and toluene can both cause narcotic effects, however, the PEL for vinyl chloride is established to protect against cancer while the PEL for toluene is established to protect against non-carcinogenic effects.

## APPENDIX 3 – PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS

Chemical Abstracts Registry Number (a)	Skin <sup>(b)</sup>	Name <sup>(c)</sup>	PEL <sup>(d)</sup>			STEL <sup>(o)</sup>	
			ppm <sup>(e)</sup>	mg/M <sup>3(f)</sup>	Ceiling <sup>(g)</sup>	ppm <sup>(e)</sup>	mg/M <sup>3(f)</sup>
75070		Acetaldehyde	25	45	C		
64197		Acetic acid	10	25	40 ppm	15	37
108247		Acetic Anhydride	5	20	C		
67641		Acetone	500	1200	3000 ppm	750	1780
75868		Acetone cyanohydrin as CN	4.7	5	C		
75058	S	Acetonitrile	40	70		60	105
98862		Acetophenone	10	49			
53963	S	2-Acetylaminofluorene; N-fluoren-2-yl acetamide; see Section 5209					
74862		Acetylene	(h)				
540590		Acetylene dichloride; see 1,2-Dichloroethylene					
79276		Acetylene tetrabromide:1,1,2,2-tetrabromoethane	1	14			
79345		Acetylene tetrachloride; see 1,1,2,2-Tetrachloroethane					
50782		Acetylsalicylic acid (Aspirin)		5			
107028	S	Acrolein	0.1	0.25	C		
79061	S	Acrylamide	--	0.03			
79107	S	Acrylic acid	2	5.9			
107131	S	Acrylonitrile; see Section 5213	2	4.5			
124049		Adipic acid	--	5			
111693	S	Adiponitrile	2	8.8			
309002	S	Aldrin; 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-endo-1,2-exo-5,8-dimethanonaphthalene	--	0.25			
107186	S	Allyl alcohol	0.5	1.25		4	10
107051		Allyl chloride	1	3		2	6
106923	S	Allyl glycidyl ether; AGE	0.2	0.93			
2179591		Allyl propyl disulfide	2	12		3	18
1344281		Alumina; see Particulates not otherwise regulated					
		Aluminum, alkyls (not otherwise classified)	--	2			
		Aluminum soluble salts	--	2			
		Aluminum metal and oxide	--				
		Total dust	--	10			
		Respirable fraction <sup>(n)</sup>	--	5 <sup>(n)</sup>			
		Aluminum pyro powders	--	5			
		Aluminum welding fumes	--	5			
300925		Aluminum distearate	--	10			
7047849		Aluminum stearate	--	10			
637127		Aluminum tristearate	--	10			
1300738		Aminodimethylbenzene; see Xylidene					

92671	S	4-Aminodiphenyl; see Section 5209				
141435		2-Aminoethanol; see Ethanolamine				
91598		2-Aminonaphthalene; see beta-Naphthylamine, Section 5209				
504290		2-Aminopyridine	0.5	2		
61825		Amitrole	--	0.2		
7664417		Ammonia	25	18	35	27
3825261	S	Ammonium perfluorooctanoate	--	00.1		
12125029		Ammonium chloride fume	--	10	--	20
1002897		Ammonium stearate	--	10		
7773060		Ammonium sulfamate	--			
		Total dust	--	10		
		Respirable fraction <sup>(n)</sup>	--	5		
620111		3-Amyl acetate; See Pentyl acetate				
628637		n-Amyl acetate; See Pentyl acetate				
626380		sec-Amyl acetate (all isomers and mixtures); See Pentyl acetate				
625161		tert-Amyl acetate; See Pentyl acetate				
62533	S	Aniline	2	7.6		
29191524	S	Anisidine (ortho and para isomers)	0.1	0.5		
		Antimony and compounds, as Sb	--	0.5		
86884		ANTU; 1-(1-naphthyl)-2-thiourea; Bantu; Rattrack	--	0.3		
7440371		Argon	(h)			
7440382		Arsenic and inorganic arsenic compounds; see also		0.01		
		Section 5214				
		Arsenic, organic compounds, as As	--	0.2		
7784421		Arsine; AsH <sub>3</sub>	0.05	0.2		
1332-21-4		Asbestos (including actinolite, amosite anthophyllite, chrysotile, crocidolite, and tremolite); see Section 5208				
8052424		Asphalt (petroleum) fumes	--	5		
1912249		Atrazine	--	5		
86500	S	Azinphos methyl; o,o-dimethyl S-(4-oxo-1,2,3- benzotriazin-3(4H)-ylmethyl) phosphorodithioate	--	0.2		
3333526	S	2,2'-Azobisisobutyronitrile decomposition product, see Tetramethyl succinonitrile				
7440393		Barium, soluble compounds, as Ba	--	0.5		
7727437		Barium sulfate; see Particulates not otherwise regulated				
17804352		Benomyl				
		Total dust	--	10		
		Respirable fraction <sup>(n)</sup>	--	5		
71432	S	Benzene; see also Section 5218	1		5	--
92875	S	Benzidine; 4,4'-diaminobiphenyl, see Section 5209				
71432		Benzol; see Benzene				

106514		D-Benzoquinone; see Quinone					
98884		Benzoyl chloride	0.2	1.1	C		
94360		Benzoyl peroxide; dibenzoyl peroxide	--	5			
140114		Benzyl acetate	10	61			
100447		benzyl chloride; alpha-chlorotoluene	1	5			
7440417		Beryllium, and beryllium compounds as Be	--	0.0002	0.025mg/M <sup>3</sup>	--	
92524		Biphenyl; diphenyl; phenylbenzene	0.2	1.5			
542881		Bis(chloromethyl) ether, see bis-Chloromethyl ether,					
		Section 5209					
3033623	S	Bis (Dimethylaminoethyl) ether (DMAEE)	0.05	0.328		0.15	0.983
1304821		Bismuth telluride					
		Total dust	--	10			
		Respirable fraction <sup>(n)</sup>	--	5			
		Bismuth telluride (selenium-doped)	--	5			
		Borates, tetra, sodium salts					
		Anhydrous	--	5			
		Decahydrate	--	5			
		Pentahydrate	--	5			
1303862		Boron oxide	--	10			
10294334		Boron tribromide	1	10	C		
7637072		Boron trifluoride	1	3	C		
314409		Bromacil	1	10			
7726956		Bromine	0.1	0.7	C		
7789302		Bromine pentafluoride	0.1	0.7			
74975		Bromochloromethane; see Chlorobromomethane					
74964		Bromoethane; see Ethyl bromide					
75252	S	Bromoform; tribromomethane	0.5	5			
74839		Bromomethane, see Methyl bromide					
106945	S	1-bromopropane, n-propyl bromide	5	25			
75638		Bromotrifluoromethane; see Trifluorobromomethane					
106990		1,3-Butadiene (see also section 5201)	1	2.2		5	11
106978		Butane	800	1,900			
109795		1-Butanethiol; see Butyl mercaptan					
71363		1-Butanol; see n-Butyl alcohol					
78933		2-Butanone; see Methyl ethyl ketone					
111762	S	2-Butoxyethanol (EGBE)	20	97			
123864		n-Butyl acetate	150	710		200	950
105464		sec-Butyl acetate	200	950			
540885		tert-Butyl acetate	200	950			
141322		Butyl acrylate	2	11			
71363	S	n-Butyl alcohol; 1-butanol	50	150	C		
78922		sec-Butyl alcohol	100	305			
75650		tert-Butyl alcohol	100	300		150	450
109739	S	Butylamine	5	15	C		
1189851	S	tert-Butyl chromate; di-tert-butyl					

		chromate, as CrO <sub>3</sub>	--	0.1	C		
		as Cr		0.005			
		(see also Sections 1532.2, 5206 & 8359)					
2426086		n-Butyl glycidyl ether; BGE; 1-butoxy-2,3-epoxypropane	25	135			
138227		n-Butyl lactate	5	25			
109795		n-Butyl mercaptan	0.5	1.5			
89725	S	o-sec-Butylphenol	5	30			
98511		p-tert-Butyltoluene	1	6.1		20	120
7440439		Cadmium metal dust, as Cd (see also Sections 1532 & 5207)	--	0.005			
		Cadmium, soluble salts, as Cd (see also Sections 1532 & 5207)	--	0.005			
1306190		Cadmium oxide fume, as Cd (see also Sections 1532 & 5207 )	--	0.005			
7778441		Calcium arsenate; see Arsenic,inorganic (see also Section 5214)					
471341		Calcium carbonate; see Particulates not otherwise regulated	--				
156627		Calcium cyanamide	--	0.5			
1305620		Calcium hydroxide	--	5			
1305788		Calcium oxide	--	2			
		Calcium silicate; see Particulates not otherwise regulated					
1344952		Calcium silicate (synthetic): see Particulates not otherwise regulated					
1592230		Calcium stearate	--	10			
7778189		Calcium sulfate; see Particulates not otherwise regulated					
76222		Camphor (synthetic)	--	2			
105602		Caprolactam dust	--	1		--	3
105602		Caprolactam vapor	5	20		10	40
2425061	S	Captafol	--	0.1			
133062		Captan	--	5			
63252		Carbaryl; 1-naphthyl N-methylcarbamate	--	5			
1563662		Carbofuran	--	0.1			
1333864		Carbon black	--	3.5			
124389		Carbon dioxide	5,000	9,000		30,000	54,000
75150	S	Carbon disulfide	1	3	30 ppm	12	36
630080		Carbon monoxide	25	29	200 ppm		
558134		Carbon tetrabromide	0.1	1.4		0.3	4
56235	S	Carbon tetrachloride	2	12.6	200 ppm	10	63
75445		Carbonyl chloride; see Phosgene					
353504		Carbonyl fluoride	2	5		5	15
120809	S	Catechol; pyrocatechol	5	20			
9004346		Cellulose (paper fiber); see Particulates not otherwise regulated					
21351791		Cesium hydroxide		2			

57749	S	Chlordane; 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane	--	0.5			
8001352	S	Chlorinated camphene; toxaphene	--	0.5		--	1
		Chlorinated diphenyl oxide	--	0.5			
7782505		Chlorine	0.5	1.5		1	3
10049044		Chlorine dioxide	0.1	0.3		0.3	0.9
7790912		Chlorine trifluoride	0.1	0.4	C		
107200		Chloroacetaldehyde	1	3	C		
78955	S	Chloroacetone	1	3.8	C		
532274		alpha-Chloroacetophenone; phenacyl chloride	0.05	0.3			
79049	S	Chloroacetyl chloride	0.05	0.2		0.15	0.69
108907		Chlorobenzene; monochlorobenzene	10	46			
2698411	S	o-Chlorobenzylidene malononitrile; OCBM	0.05	0.4	C		
74975		Chlorobromomethane; bromochloromethane	200	1,050			
126998	S	2-Chloro-1,3-butadiene; see Chloroprene					
75456		Chlorodifluoromethane; Fluorocarbon 22	1,000	3,500			
53469219	S	Chlorodiphenyl (42% chlorine)	--	1			
11097691	S	Chlorodiphenyl (54% chlorine)	--	0.5			
106898		1-Chloro-2,3-epoxypropane; see Epichlorohydrin					
75003		Chloroethane; see Ethyl chloride					
107073		2-Chloroethanol; see Ethylene chlorohydrin					
75014		Chloroethylene, see Vinyl chloride, Section 5210					
67663		Chloroform; trichloromethane	2	9.78			
74873		Chloromethane, see Methyl chloride					
107302		Chloromethyl methyl ether; see Methyl chloromethyl ether, Section 5209					
542881		bis-Chloromethyl ether, see also Section 5209	0.001	0.005			
100005		1-Chloro-4-nitrobenzene; see p-Nitrochlorobenzene					
600259		1-Chloro-1-nitropropane	2	10			
76153		Chloropentafluoroethane	1,000	6,320			
76062		Chloropicrin; trichloronitromethane	0.1	0.7			
126998	S	Chloroprene; 2-chloro-1,3-butadiene	10	36			
598787	S	2-Chloropropionic acid	0.1	0.44			
2039874		o-Chlorostyrene	50	285		75	428
95498	S	o-Chlorotoluene	50	250			
1929824		2-Chloro-6-(trichloromethyl)pyridine; see Nitrapyrin					
2921882	S	Chlorpyrifos	--	0.2			
		Chromite ore processing (chromate), as Cr (see also Sections 1532.2, 5206 & 8359)	--	0.005			
7440473		Chromium metal	--	0.5			
		Chromium (II) compounds, as Cr	--	0.5			
		Chromium (III) compounds, as Cr	--	0.5			
		Chromium (VI) compounds, as Cr (see also Sections 1532.2, 5206 & 8359)	--	0.005	0.1mg/M <sup>3</sup>		
14977618		Chromyl chloride	0.025	0.15			
2971906		Clopidol	--				



		Total dust	--	10		
		Respirable fraction	--	5		
		Coal (Bituminous) dust				
		<5% quartz, respirable fraction <sup>(n)</sup>	--	0.9		
		>5% quartz, respirable fraction <sup>(n)</sup>	--	0.1		
		Coal tar pitch volatiles <sup>(i)</sup>	--	0.2		
7440484		Cobalt, metal fume and dust, as Co	--	0.020		
		Cobalt carbonyl, as Co	--	0.1		
16842038		Cobalt hydrocarbonyl, as Co	--	0.1		
		Coke oven emissions, see Section 5211		0.15		
7440508		Copper metal fume, as Cu	--	0.1		
		Copper salts, dusts and mists, as Cu	--	1		
		Corundum, see Particulates not otherwise regulated				
		Cotton dust, see also Section 5190	--	1 <sup>(i)</sup>		
1319773	S	Cresol (all isomers)	5	22		
123739	S	Crotonaldehyde; beta-methylacrolein			0.3	
4170303						
299865		Crufomate	--	5		
98828	S	Cumene; isopropylbenzene	50	245		
420042		Cyanamide	--	2		
	S	Cyanide, as CN	--	5		
460195		Cyanogen	10	20		
506774		Cyanogen chloride	0.3	0.6	C	
110827		Cyclohexane	300	1,050		
108930	S	Cyclohexanol	50	200		
108941	S	Cyclohexanone	25	100		
110838		Cyclohexene	300	1,015		
108918	S	Cyclohexylamine	10	40		
121824	S	Cyclonite; RDX; cyclotrimethylenetrinitramine	--	0.07		
542927		Cyclopentadiene	75	200		
287923		Cyclopentane	600	1,720		
13121705		Cyhexatin; tricyclohexyltin hydroxide		5		
94757		2,4-D;2,4-dichlorophenoxyacetic acid	--	10		
50293	S	DDT; 1,1,1-trichloro-2,2-bis-(p-chlorophenyl)ethane	--	1		
62737		DDVP, see Dichlorvos				
17702419	S	Decaborane	0.05	0.3	0.15	0.9
8065483	S	Demeton; a mixture of o,o-diethyl o-2(ethylthio)ethyl phosphorothioate and o,o'-diethyl S-2(ethylthio)ethyl phosphorothioate	0.01	0.1		
123422		Diacetone alcohol; 4-hydroxy-4-methyl-2-pentanone	50	240		
107153		1,2-Diaminoethane; see Ethylenediamine				
		Diatomaceous earth; see Silica-amorphous				
333415	S	Diazinon; o,o-diethyl o-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate	--	0.1		

334883		Diazomethane	0.2	0.4				
94360		Dibenzoyl peroxide; see Benzoyl peroxide						
19287457		Diborane	0.1	0.1				
2528361	S	Dibutyl phenyl phosphate	0.3	3.5				
96128		1,2-Dibromo-3-chloropropane; DBCP; see Section 5212	.001	.01				
75616		Dibromodifluoromethane; see Difluorodibromomethane						
106934	S	1,2-Dibromomethane; see Ethylene dibromide, Section 5219						
102818	S	2-N-Dibutylaminoethanol	2	14				
107664		Dibutyl phosphate	1	5		2		10
84742		Dibutyl phthalate	--	5				
7572294		Dichloroacetylene	0.1	0.4	C			
95501	S	o-Dichlorobenzene	25	150	50 ppm			
106467		p-Dichlorobenzene; 1,4-dichlorobenzene	10	60	200 ppm	110		675
91941	S	3,3'-Dichlorobenzidine; 4,4'-diamino-3,3'- dichlorobiphenyl; see Section 5209						
764410	S	1,4 -Dichloro-2-butene	0.005	0.025				
75718		Dichlorodifluoromethane	1000	4950	6200 ppm			
118525		1,3-Dichloro-5,5-dimethyl hydantoin	--	0.2		--		0.4
75343		1,1-Dichloroethane	100	400				
107062		1,2-Dichloroethane, see Ethylene dichloride						
75354		1,1-Dichloroethylene; see Vinylidene chloride						
540590		1,2-Dichloroethylene; acetylene dichloride	200	790				
111444	S	Dichloroethyl ether; bis(2-chloroethyl) ether	5	30		10		60
75434		Dichlorofluoromethane; Fluorocarbon 21	10	42				
75092		Dichloromethane; see Methylene chloride						
594729		1,1-Dichloro-1-nitroethane	2	10				
78875		1,2-Dichloropropane; see Propylene dichloride						
542756	S	Dichloropropene	1	5				
75990		2,2-Dichloropropionic acid	1	6				
76142		1,2-Dichlorotetrafluoroethane; Fluorocarbon 114	1,000	7,000				
62737	S	Dichlorvos (DDVP); 2,2-dichlorovinyl dimethyl phosphate	0.1	1				
141662	S	Dicrotophos	--	0.25				
5124301		Dicyclohexylmethane-4,4'-diisocyanate; see Methylene bis-(4-cyclohexylisocyanate)						
77736		Dicyclopentadiene	5	30				
102545		Dicyclopentadienyl iron	--					
		Total dust	--	10				
		Respirable fraction <sup>(n)</sup>	--	5				
60571	S	Dieldrin; 1,2,3,4,10,10-hexachloro-6,7-epoxy- 1,4,4a,5,6,7,8,8a-octahydro-1,4-endo-exo-5,8- dimethanonaphthalene	--	0.25				
111422	S	Diethanolamine	0.46	2				
109897	S	Diethylamine	5	15	C			

112367	S	Diethylene glycol diethyl ether, Ethyl diglyme	5	33		
111966	S	Diethylene glycol dimethyl ether, Diglyme	1	5.5	5	27
100378	S	2-(Diethylamino) ethanol	2	9.6		
123911		1,4-Diethylene dioxide; see p-Dioxane				
111400S		Diethylenetriamine	1	4		
60297		Diethyl ether; see Ethyl ether				
117817		Di-(2-ethylhexyl) phthalate; see Di-sec-octyl phthalate				
96220		Diethyl ketone	200	705	300	1057
84662		Diethyl phthalate	--	5		
75616		Difluorodibromomethane; dibromodifluoromethane	100	860		
2238075		Diglycidyl ether; DGE; bis(2,3-epoxypropyl) ether	0.1	0.5		
123319		p-Dihydroxybenzene; see Hydroquinone				
108838		Diisobutyl ketone; 2,6-dimethyl-4-heptanone	25	150		
108189	S	Diisopropylamine	5	20		
108203		Diisopropyl ether; see Isopryl ether				
109875		Dimethoxymethane; see Methylal				
127195	S	Dimethylacetamide	10	35		
124403		Dimethylamine	5	9.2	15	27.6
60117		4-Dimethylaminoazobenzene, see Section 5209				
1300738		Dimethylaminobenzene; see Xylidene				
121697	S	N,N-Dimethylaniline; dimethylphenylamine	5	25	10	50
1330207		Dimethylbenzene; see Xylene				
108849		1,3-Dimethylbutyl acetate; see sec- Hexyl acetate				
300765		o,o-Dimethyl o-(1,2-dibromo-2,2-dichloroethyl) phosphate; see Naled				
14857342		Dimethylethoxysilane	0.5	2.1	1.5	6.4
68122	S	Dimethylformamide; DMF	10	30		
108838		2,6-Dimethyl-4-heptanone; see Diisobutyl ketone				
57147	S	1,1-Dimethylhydrazine	0.01	0.025		
67641		Dimethyl ketone; see Acetone				
62759		N,N-Dimethylnitrosamine; see N-Nitrosodimethylamine, Section 5209				
131113		Dimethyl phthalate	--	5		
77781	S	Dimethyl sulfate; methyl sulfate	0.1	0.5		
148016		Dinitolmide; 3,5-Dinitro-o-toluamide	--	5		
528290,	S	Dinitrobenzene (all (isomers)				
99650,		ortho, meta and				
100254		para isomers	0.15	1		
534521	S	4,6-Dinitro-o-cresol; 2-methyl- 4,6-dinitrophenol	--	0.2		
25321146	S	2,4-Dinitrotoluene	--	0.15		
123911	S	p-Dioxane;				

		1,4-dioxacyclohexane; 1,4-diethylene dioxide	0.28	1.0		
78342	S	Dioxathion	--	0.2		
92524		Diphenyl; see Biphenyl				
122394		Diphenylamine; N-phenylaniline	--	10		
101688		Diphenylmethane diisocyanate; see Methylene bis(phenylisocyanate)				
123193		Dipropyl ketone	50	235		
34590948	S	Dipropylene glycol methyl ether	100	600	150	900
85007		Diquat; 1,1'-ethylene-2,2'- dipyridinium dibromide	--			
		Total dust	--	0.5		
		Respirable fraction <sup>(n)</sup>				
117817		Di-sec-octyl phthalate; bis(2 ethylhexyl) phthalate	--	5	--	
97778		Disulfiram	--	2		
298044	S	Disulfoton; o,o-diethyl S-2-(ethylthio)ethyl phosphorodithioate	--	0.1		
128370		2,6-Di-tert-butyl-p-cresol	--	10		
330541		Diuron	--	10		
68122		DMF; see Dimethylformamide				
57147		DMH; see 1,1-Dimethylhydrazine				
1321740		Divinyl benzene	10	50		
		Dust, nuisance dust and particulates, see Particulates not otherwise regulated				
12415348		Emery; see Particulates not otherwise regulated				
115297	S	Endosulfan; 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4, 3-benzodioxathiepin-3-oxide	--	0.1		
72208	S	Endrin; 1,2,3,4,10,10-hexachloro-6,7-epoxy- 1,4,4a,5,6,7,8,8a-octahydro-1,4-endo-endo-5, 8-dimethanonaphthalene	--	0.1		
13838169		Enflurane	2	15		
106898	S	Epichlorohydrin; 1-chloro-2, 3-epoxypropane	0.05	0.19		
2104645	S	EPN; o-ethyl o-(p-nitrophenyl) phenylphosphonothioate	--	0.1		
75569		1,2-Epoxypropane; see Propylene oxide				
556525		2,3-Epoxypropanol; see Glycidol				
74840		Ethane	(h)	--		
75081		Ethanethiol; see Ethyl mercaptan				
64175		Ethanol; see Ethyl alcohol				
141435		Ethanolamine; 2-aminoethanol	3	8	6	15
563122	S	Ethion	--	0.4		
110805	S	2-Ethoxyethanol	5	18		
111159	S	2-Ethoxyethyl acetate	5	27		
141786		Ethyl acetate	400	1,400		
140885	S	Ethyl acrylate	5	20	25	100

64175		Ethyl alcohol; ethanol	1,000	1,900				
75047	S	Ethylamine	5	9.2	C			
541855		Ethyl sec-amyl ketone; 5-methyl-3-heptanone	25	130				
100414		Ethylbenzene	5	22		30		130
74964	S	Ethyl bromide	5	22				
106354		Ethyl butyl ketone; 3-heptanone	50	230		75		345
75003	S	Ethyl chloride; chloroethane	100	264				
7085850		Ethyl cyanoacrylate	0.2	1.02				
673923		Ethyl tert-butyl ether	5	21				
74851		Ethylene	(h)	--				
107073	S	Ethylene chlorohydrin; 2-chloroethanol	1	3	C			
107153		Ethylenediamine; 1,2-diaminoethane	10	25				
106934	S	Ethylene dibromide; 1,2-dibromoethane, see Section 5219	0.13	1	C			
107062		Ethylene dichloride; 1,2-dichloroethane	1	4	200 ppm	2		8
107211		Ethylene glycol (vapor)	40	100	C			
629141	S	Ethylene glycol diethyl ether, 1,2-diethoxyethane	5	24				
110714	S	Ethylene glycol dimethyl ether, 1,2-dimethoxyethane, Glyme	1	3.7		5		18
628966	S	Ethylene glycol dinitrate		(k)		--		0.1
110805	S	Ethylene glycol monoethyl ether, see 2-Ethoxyethanol						
109864	S	Ethylene glycol monomethyl ether, see 2-Methoxyethanol						
110496	S	Ethylene glycol monomethyl ether acetate; see 2-Methoxyethyl acetate						
151564	S	Ethyleneimine; see also Section 5209	0.5	1				
75218		Ethylene oxide; see Section 5220	1	2		5		
60297		Ethyl ether	400	1,200		500		1500
109944		Ethyl formate	100	300				
75343		Ethylidene chloride; see 1,1-Dichloroethane						
16219753		Ethylidene norbornene	5	25	C			
75081		Ethyl mercaptan; ethanethiol	0.5	1				
78933		Ethyl methyl ketone; see Methyl ethyl ketone						
100743	S	N-Ethylmorpholine; 4-ethyl-1, 4-tetrahydrooxazine	5	23				
78104		Ethyl silicate; tetraethyl silicate	10	85				
22224926	S	Fenamiphos		0.1				
115902		Fensulfothion	--	0.1				
55389	S	Fenthion	--	0.2				
14484641		Ferbam; ferric N,N-dimethylthiocarbamate	--	10				
12604589		Ferrovandium dust	--	1		--		3
14808607		Fibrous glass, see Glass						
		Flour dust		0.5 <sup>(s)</sup>				
		Fluorides, as F	--	2.5				
7782414		Fluorine	0.1	0.2				
75694		Fluorocarbon 11; see Trichlorofluoromethane						

75718		Fluorocarbon 12; see Dichlorodifluoromethane					
75434		Fluorocarbon 21; see Dichlorofluoromethane					
75456		Fluorocarbon 22; see Chlorodifluoromethane					
76120		Fluorocarbon 112; see 1,1,2,2-Tetrachloro-1,2-difluoroethane					
76131		Fluorocarbon 113; see 1,1,2-Trichloro-1,2,2-trifluoroethane					
		Fluorocarbon 114; see 1,2-Dichlorotetrafluoroethane					
75694		Fluorotrichloromethane; see Trichlorofluoromethane					
944229	S	Fonofos	--	0.1			
50000		Formaldehyde, see Section 5217	0.75	--		2	--
75127	S	Formamide	10	18			
64186		Formic acid	5	9		10	19
98011	S	Furfural	2	8			
98000	S	Furfuryl alcohol	10	40		15	60
8006619		Gasoline	300	900		500	1500
7782652		Germanium tetrahydride	0.2	0.6			
		Glass, fibrous	1.0				
			f/cc <sub>(q)</sub>				
111308		Glutaraldehyde <sup>(t)</sup>	0.05	0.2	C		
56815		Glycerin mist; see Particulates not otherwise regulated					
123944		Glyceryl stearate	--	10			
556525		Glycidol; 2,3-epoxy-1-propanol	2	6.1			
111762		Glycol monobutyl ether; see 2-Butoxyethanol					
110805		Glycol monoethyl ether; see 2-Ethoxyethanol					
109864		Glycol monoethyl ether; see 2-Methoxyethanol					
107222		Glyoxal, 1,2-ethanedione		0.1 <sup>(s), (u)</sup>			
		Grain dust (oat, wheat, barley)	--	10			
7782425		Graphite, natural respirable dust		2.5			
		Graphite, synthetic					
		Total dust	--	10			
		Respirable fraction <sup>(n)</sup>	--	5			
13397245		Gypsum; Calcium sulfate dihydrate; see Particulates not otherwise regulated					
7440586		Hafnium	--	0.5			
151677		Halothane	2	16			
822060		HDI; see Hexamethylene diisocyanate					
7440597		Helium	(h)	--			
76448	S	Heptachlor; 1,4,5,6,7,8,8-hepta-chloro-3a,4,7,7a-tetrahydro-4,7-methanoindene	--	0.05			
142825		n-Heptane	400	1,600		500	2000
118741	S	Hexachlorobenzene	--	0.002			
87683	S	Hexachlorobutadiene	0.02	0.24			
77474		Hexachlorocyclopentadiene	0.01	0.11			

67721	S	Hexachloroethane; perchloroethane	1	10				
1335871	S	Hexachloronaphthalene	--	0.2				
684162	S	Hexafluoroacetone; 1,1,1,3,3,3-hexafluoro-2-propanone	0.1	0.7				
822060		Hexamethylene diisocyanate; HDI	0.005	0.034				
110543	S	n-Hexane	50	180				
		Hexane, other isomers	500	1800		1000	3600	
124094		1,6-Hexanediamine	0.5	2.3				
591786		2-Hexanone; see Methyl butyl ketone						
592416		1-Hexene	50	180				
108101		Hexone; see Methyl isobutyl ketone						
108849		sec-Hexyl acetate; 4-methyl-2-pentyl acetate; 1,3-dimethyl-butyl acetate	50	300				
107415		Hexylene glycol	25	125	C			
302012	S	Hydrazine	0.01	0.013				
10035106		Hydrobromic acid; see Hydrogen bromide						
7647010		Hydrochloric acid; see Hydrogen chloride						
74908		Hydrocyanic acid; see Hydrogen cyanide						
7664393		Hydrofluoric acid; see Hydrogen fluoride						
1333740		Hydrogen	(h)	--				
61788327		Hydrogenated terphenyls	0.5	5				
10035106		Hydrogen bromide	3	10	C			
7647010		Hydrogen chloride	0.3	0.45	2 ppm			
74908	S	Hydrogen cyanide	4.7	5	C			
7664393	S	Hydrogen fluoride, as F	0.4	0.33		1	0.83	
7722841		Hydrogen peroxide, as H <sub>2</sub> O <sub>2</sub>	1	1.4				
7783075		Hydrogen selenide, as Se	0.05	0.2				
7783064		Hydrogen sulfide	10	14	50 ppm	15	21	
123319		Hydroquinone; 1,4-benzendiol	--	2				
999611	S	2-Hydroxypropyl acrylate	0.5	3				
95136		Indene	10	48				
7440746		Indium	--	0.1				
		Indium compounds	--	0.1				
7553562		Iodine	0.1	1	C			
75478		Iodoform	0.6	10				
4098719		IPDI; see Isophorone diisocyanate						
1309371		Iron oxide fume	--	5				
13463406		Iron pentacarbonyl, as Fe	0.1	0.8		0.2	1.6	
		Iron salts, soluble, as Fe	--	1				
123922		Isoamyl acetate; 3-methylbutyl acetate; see Pentyl acetate						
123513		Isoamyl alcohol; 3-methylbutanol	100	360		125	450	
110190		Isobutyl acetate; 2-methylpropyl acetate	150	700				
78831		Isobutyl alcohol; 2-methylpropanol	50	150				
26675467		Isoflurane	2	15				
26952216	S	Isooctyl alcohol	50	270				
78591		Isophorone; 3,5,5-trimethyl-2-cyclohexene-						

		1-one	4	23		
4098719	S	Isophorone diisocyanate; IPDI	0.005	0.045	0.02	--
109591		Isopropoxyethanol	25	105		
108214		Isopropyl acetate	250	950	310	1185
67630		Isopropyl alcohol	400	980	500	1225
75310		Isopropylamine	5	12	10	24
768525	S	N-isopropylaniline	2	10		
108203		Isopropyl ether; diisopropyl ether	250	1,050		
4016142		Isopropyl glycidyl ether; IGE;				
		1,2-epoxy-3-isopropoxypropane	50	240	75	360
1332587		Kaolin; (respirable dust containing no asbestos and <1% crystalline silica)	--	2		
463514		Ketene; ethenone	0.5	0.9	1.5	3
		Lead arsenate, see Sections 5214 and 5198				
7758976		Lead chromate, as Pb	--	0.02		
		as Cr	--	0.005		
		(see also Section 5198, 1532.1, 1532.2, 5206 & 8359)				
		Lead (metallic) and inorganic compounds, dust and fume, as Pb (see also Section 5198 )	--	0.05		
78002		Lead tetraethyl, see Tetraethyl lead				
75741		Lead tetramethyl, see Tetramethyl lead				
1317653		Limestone; calcium carbonate; see Particulates not otherwise regulated				
58899	S	Lindane; 1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer	--	0.5		
7580678		Lithium hydride	--	0.025		
		L.P.G.; liquefied petroleum gas	1,000	1,800		
4485125		Lithium stearate	--	10		
13717005		Magnesite; magnesium carbonate; see Particulates not otherwise regulated				
1309484		Magnesium oxide fume, as Mg	--	10		
557040		Magnesium stearate	--	10		
121755	S	Malathion; o,o-dimethyl S-1(1,2- dicarboethoxyethyl) phosphorodithioate	--	10		
108316		Maleic anhydride; cis-butenedioic anhydride	0.1	0.4		
		Manganese and compounds, as Mn	--	0.2		
7439965		Manganese fume, as Mn	--	0.2	--	3
12079651	S	Manganese, cyclopentadienyl-tricarbonyl, as Mn	--	0.1		
		Manganese tetroxide	--	0.2		
		Marble; calcium carbonate; see Particulates not otherwise regulated				
101779	S	MDA; see 4,4'-Methylene dianiline				
101688		MDI; see Methylene bis(phenylisocyanate)				
7439976	S	Mercury alkyls, as Hg	--	0.01	0.04 mg/M <sup>3</sup> --	0.03
7439976	S	Mercury, metallic and inorganic compounds as Hg	--	0.025	0.1 mg/M <sup>3</sup>	



7439976	S	Mercury aryl compounds as Hg	--	0.01	C		
108678		Mesitylene; see 1,3,5-Trimethylbenzene					
141797		Mesityl oxide; 4-methyl-3-pentene-2-one	15	60		25	100
79414	S	Methacrylic acid	20	70			
74828		Methane	(h)	--			
74931		Methanethiol; see Methyl mercaptan					
67561		Methanol; see Methyl alcohol					
16752775	S	Methomyl	--	2.5			
72435		Methoxychlor; 1,1,1-trichloro-2, 2-bis(p-methoxyphenyl)ethane	--	10			
109864	S	2-Methoxyethanol	5	16			
110496		2-Methoxyethyl acetate	5	24			
76380		Methoxyflurane	2	13			
150765		4-Methoxyphenol	--	5			
79209		Methyl acetate	200	610		250	760
74997		Methyl acetylene; propyne	1,000	1,650			
		Methyl acetylene-propadiene mixture; MAPP	1,000	1,800		1250	2250
96333	S	Methyl acrylate	10	35			
126987	S	alpha-Methylacrylonitrile	1	3			
624419		2-Methylbutyl acetate; see Pentyl acetate					
109875		Methylal; dimethoxymethane	1,000	3,100			
67561	S	Methyl alcohol; methanol	200	260	1000 ppm	250	325
74895		Methylamine	5	6.4		15	19
108112		Methyl amyl alcohol; see Methyl isobutyl carbinol					
110430		Methyl n-amyl ketone; 2-heptanone	50	235			
100618	S	N-Methylaniline; monomethylaniline	0.5	2			
95534		o-Methylaniline; see o-Toluidine					
74839	S	Methyl bromide	1	3.88	20 ppm		
591786	S	Methyl n-butyl ketone; 2-hexanone	1	4		10	40
74873		Methyl chloride	50	105	300 ppm	100	210
71556		Methyl chloroform; 1,1,1-trichloroethane	350	1900	800 ppm	450	2450
107302		Methyl chloromethyl ether; see Section 5209					
75058		Methyl cyanide; see Acetonitrile					
137053		Methyl 2-cyanoacrylate	0.2	0.908			
108872		Methylcyclohexane	400	1,600			
25639423		Methylcyclohexanol (meta- and para-isomer mixture)	50	235			
583608	S	o-Methylcyclohexanone	50	230		75	345
12108133	S	2-Methylcyclopentadienyl manganese tricarbonyl, as Mn	--	0.2			
8022002	S	Methyl demeton; a mixture of o,o-dimethyl o-(2-(ethylthio)ethyl) phosphorothioate and o,o-dimethyl S-(2-(ethylthio)-ethyl) phosphorothioate	--	0.5			
101144	S	4,4'-Methylene bis(2-chloroaniline), see also Section 5215	--	0.01			

5124301		Methylene bis(4-cyclohexylisocyanate); hydrogenated MDI	0.005	0.054		
101688		Methylene bis(phenylisocyanate); MDI; diphenylmethane diisocyanate	0.005	0.051		
75092		Methylene chloride; dichloromethane (see also section 5202)	25	87	125	435
101779	S	4,4'-Methylene dianiline; MDA (see also Sections 1535 and 5200 )	0.01	0.08	0.1	0.8
78933		Methyl ethyl ketone; MEK; 2-butanone; ethyl methyl ketone	200	590	300	885
1338234		Methyl ethyl ketone peroxide	0.2	1.5	C	
107313		Methyl formate	100	250	150	375
60344	S	Methyl hydrazine; monomethyl hydrazine	0.01	0.019		
74884	S	Methyl iodide	2	10		
110123		Methyl isoamyl ketone	50	234		
108112	S	Methyl isobutyl carbinol; 4-methyl-2-pentanol; methyl amyl alcohol	25	100	40	165
108101		Methyl isobutyl ketone; Hexone	50	205	75	300
624839	S	Methyl isocyanate	0.02	0.05		
563804		Methyl isopropyl ketone	200	705		
74931		Methyl mercaptan	0.5	1		
80626		Methyl methacrylate; methyl 2-methyl-2-propenoate	50	205	100	410
298000	S	Methyl parathion; o,o-dimethyl o-(p-nitrophenyl) phosphorothioate	--	0.2		
107879		Methyl propyl ketone; 2-pentanone	200	700	250	875
872504	S	N-Methylpyrrolidone (NMP); 1-Methyl-2-pyrrolidone; N-Methyl-2-pyrrolidone; 1-Methyl-2-pyrrolidinone	1	4		
681845		Methyl silicate; tetramethyl silicate	1	6		
98839		alpha-Methylstyrene; 1-methyl- 1-phenylethene	50	240	100	485
77781		Methyl sulfate; see Dimethyl sulfate				
1634044		Methyl tert-butyl ether; MTBE	40	144		
78944	S	Methyl vinyl ketone	0.05	0.14	C	
21087649		Metribuzin	--	5		
7786347	S	Mevinphos; 2-carbomethoxyl- 1-propen-2-yl dimethyl phosphate	0.01	0.1	0.03	0.3
		Mica, see Silicates				
		Mineral wool fiber; see Particulates not otherwise regulated				
7439987		Molybdenum, insoluble compounds, as Mo Total dust	--	10		
		Respirable fraction <sup>(n)</sup>	--	3		
		Molybdenum, soluble compounds, as Mo	--	0.5 <sup>(n)</sup>		
6923224		Monocrotophos	--	0.25		

100618		Monomethylaniline; see N-Methylaniline				
60344		Monomethylhydrazine; see Methyl hydrazine				
110918	S	Morpholine; tetrahydro-4H-1, 4-oxazine	20	70	30	105
7647010		Muriatic acid; see Hydrogen chloride				
300765	S	Naled; o,o-dimethyl o-(1,2-dibromo-2,2-dichloroethyl) phosphate	--	3		
8030317		Naphtha, coal tar	100	400		
91203	S	Naphthalene	0.1	0.5		
134327		alpha-Naphthylamine; 1-naphthylamine, see Section 5209				
91598		beta-Naphthylamine; 2-naphthylamine, see Section 5209				
63252		1-Naphthyl N-methylcarbamate; see Carbaryl				
25551284		Naphthalene diisocyanate; NDI	0.01	0.085	C	
7440019		Neon	(h)			
13463393		Nickel carbonyl; Ni (CO) <sub>4</sub>	0.001	0.007		
7440020		Nickel metal, as Ni	--	0.5		
		Nickel, insoluble compounds, as Ni	--	0.1		
		Nickel, soluble compounds, as Ni	--	0.05		
12035722		Nickel subsulfide	--	0.05		
54115	S	Nicotine; 1-methyl-2-(3-pyridyl)-pyrrolidine	0.075	0.5		
1929824		Nitrapyrin	--			
		Total dust	--	10		
		Respirable fraction <sup>(n)</sup>	--	5		
7697372		Nitric acid	2	5	4	10
10102439		Nitric oxide; NO	25	30		
100016	S	p-Nitroaniline	--	3		
98953	S	Nitrobenzene	1	5		
100005	S	p-Nitrochlorobenzene; 1-chloro-4-nitrobenzene	0.1	0.64		
92933		4-Nitrodiphenyl, see Section 5209				
79243		Nitroethane	100	310		
7727379		Nitrogen	(h)	--		
10102440		Nitrogen dioxide			1	1.8
		Nitrogen tetroxide; N <sub>2</sub> O <sub>4</sub> ; see Nitrogen dioxide				
7783542		Nitrogen trifluoride	10	29		
55630	S	Nitroglycerin		(k)	--	0.1
75525		Nitromethane	2	5		
108032		1-Nitropropane	25	90		
79469		2-Nitropropane	10	35		
62759		N-Nitrosodimethylamine, see Section 5209				
1321126,	S	Nitrotoluene	2	11		
99081,						
88722,						
99990						
76062		Nitrotrichloromethane; see Chloropicrin				
10024972		Nitrous oxide	50	90		

111842		Nonane	200	1,050		
		Nuisance particulates, see Particulates not otherwise regulated				
		Total dust	--	10		
		Respirable fraction <sup>(n)</sup>	--	5		
2234131	S	Octachloronaphthalene	--	0.1	--	0.3
111659		Octane	300	1,450	375	1800
8012951		Oil (mineral) mist, particulate	--	(5) <sup>(l)</sup>		
		Oil (vegetable) mists (except castor, cashew nut or similar irritant oils); see Nuisance particulates				
		Organic arsenic compounds; see Arsenic, organic				
20816120		Osmium tetroxide, as Os	0.0002	0.002	0.0006	0.006
144627		Oxalic acid	--	1	--	2
7783417		Oxygen difluoride	0.05	0.1	C	
10028156		Ozone	0.1	0.2	0.3	0.6
8002742		Paraffin wax fume	--	2		
1910425, S		Paraquat, total particulates	--	0.5		
2074502						
1910425, S		Paraquat, respirable sizes	--	0.1 <sup>(n)</sup>		
2074502						
56382	S	Parathion; o,o-diethyl o-(p-nitrophenyl) phosphorothioate	--	0.1		
		Particulates not otherwise regulated				
		Total dust	--	10		
		Respirable fraction <sup>(n)</sup>	--	5		
		Particulate polycyclic; aromatic hydrocarbons (PPAH) see Coal tar pitch volatiles				
		PCB; see Chlorodiphenyl				
87865	S	PCP; see Pentachlorophenol				
19624227		Pentaborane	0.005	0.01	0.015	0.03
1321648	S	Pentachloronaphthalene	--	0.5		
87865	S	Pentachlorophenol; PCP	--	0.5		
115775		Pentaerythritol; tetrakis-(hydroxymethyl)methane; tetra-methylolmethane; see Particulates not otherwise regulated				
109660		Pentane	600	1,800		
107879		2-Pentanone; see Methyl propyl ketone				
628637; 626380; 123922; 625161; 620111; 624419		Pentyl acetate	50	266	100	532
67721		Perchloroethane; see Hexachloroethane				
127184		Perchloroethylene	25	170	300 ppm	100 685

594423		Perchloromethyl mercaptan; trichloromethanethiol	0.1	0.8			
7616946		Perchloryl fluoride; C1O <sub>3</sub> F	3	14		6	28
382218		Perfluoroisobutylene	0.01	0.082	C		
		Perlite					
		Total dust	--	10			
		Respirable fraction <sup>(n)</sup>	--	5			
108952	S	Phenol	5	19			
92842	S	Phenothiazine; dibenzothiazine	--	5			
106503	S	p-Phenylenediamine	--	0.1			
101848		Phenyl ether, vapor	1	7			
100425		Phenylethylene; see Styrene					
122601	S	Phenyl glycidyl ether, PGE; 1,2-epoxy- 3-phenoxypropane	0.1	0.6			
100630	S	Phenylhydrazine	5	20		10	45
108985		Phenyl mercaptan	0.5	2			
638211		Phenylphosphine	0.05	0.25	C		
298022	S	Phorate; o,o-diethyl S-(ethylthio)methyl phosphorodithioate	--	0.05		--	0.2
75445		Phosgene; carbonyl chloride; COCl <sub>2</sub>	0.1	0.4			
7803512		Phosphine; PH <sub>3</sub>	0.3	0.4		1	1
7664382		Phosphoric acid	--	1		--	3
7723140		Phosphorus, yellow	--	0.1			
10025873		Phosphorus oxychloride	0.1	0.6			
10026138		Phosphorus pentachloride	0.1	1			
1314803		Phosphorus pentasulfide; P <sub>2</sub> S <sub>5</sub>	--	1		--	3
7719122		Phosphorus trichloride	0.2	1.5		0.5	3
85449		Phthalic anhydride	1	6			
626175		m-Phthalodinitrile	--	5			
1918021		Picloram	--				
		Total dust	--	10			
		Respirable fraction <sup>(n)</sup>	--	5			
88891	S	Picric acid; 2,4,6-trinitrophenol	--	0.1			
83261		Pindone; 2-pivalyl-1, 3-indandione		0.1			
142643		Piperazine dihydrochloride	--	5			
26499650		Plaster of Paris; calcium sulfate hemihydrate; see Particulates not otherwise regulated					
7440064		Platinum, metal	--	1			
		Platinum, soluble salts, as Pt	--	0.002			
		Polychlorobiphenyls, see Chlorodiphenyl					
		Polytetrafluoroethylene, decomposition products	--	(m)			
		Portland Cement; see Particulates not otherwise regulated					
1310583		Potassium hydroxide; caustic potash	--	2	C		
593293		Potassium stearate	--	10			
74986		Propane	1000	1800 <sup>(h)</sup>			
107197	S	Propargyl alcohol; 2-propyn-1-ol	1	2			

57578		beta-Propiolactone, see Section 5209	0.5	1.5		
79094		Propionic acid	10	30		
114261		Propoxur; 2-isopropoxyphenyl N-methyl carbamate		0.5		
109604		n-Propyl acetate	200	840	250	1050
71238	S	n-Propyl alcohol	200	500	250	625
115071		Propylene	(h)	--		
78875		Propylene dichloride; 1,2-dichloropropane	75	350	110	510
6423434	S	Propylene glycol dinitrate; PGDN	0.05	0.3		
107982	S	Propylene glycol monomethyl ether	100	360	150	540
108656	S	Propylene glycol monomethyl ether acetate	100	541	150	811
75558	S	Propyleneimine; 2-methylaziridine	2	5		
75569		Propylene oxide; 1,2-epoxy-propane	2	4.75		
627134		n-Propyl nitrate	25	107	40	170
74997		Propyne; see Methylacetylene				
8003347		Pyrethrum	--	5		
110861		Pyridine	5	15		
106514		Quinone	0.1	0.4		
121824		RDX; see Cyclonite				
		Refractory ceramic fiber		0.2f/cc <sup>(q)</sup>		
108463		Resorcinol	10	45	20	90
7440166		Rhodium, metal	--	0.1		
		Insoluble compounds, as Rh	--	0.1		
		Soluble salts, as Rh	--	0.001		
299843		Ronnel; o,o-dimethyl o-(2,4,5-trichlorophenyl) phosphorothioite	--	10		
		Rosin core solder, pyrolysis products, as formaldehyde	--	0.1		
83794		Rotenone, commercial	--	5		
1309371		Rouge; see Particulates not otherwise regulated				
		Rubber solvent (Naphtha)	400	1,600		
		Selenium compounds, as Se	--	0.2		
7783791		Selenium hexafluoride	0.05	0.4		
136787		Sesone; sodium 2,4-dichloro-phenoxyethyl sulfate				
		Total dust	--	10		
		Respirable fraction <sup>(n)</sup>	--	5		
61790532		Silica, amorphous				
		Diatomaceous earth				
		Total dust	--	6		
		Respirable fraction <sup>(n)</sup>	--	3		
		Precipitated and gel	--	6		
		Silica, crystalline, respirable dust <sup>(n)</sup>				
14464461		Cristobalite, (see also Sections 1532.3 & 5204)	--	0.05		
14808607		Quartz, (see also Sections 1532.3 & 5204)	--	0.05		
60676860		Silica, fused, respirable dust	--	0.1		
15468323		Tridymite, (see also Sections 1532.3 & 5204)	--	0.05		

1317959		Tripoli, (as quartz) (see also Sections 1532.3 & 5204)	--	0.05				
		Silicates (<1% crystalline silica)						
12001262		Mica (respirable dust)	--	3				
		Soapstone, total dust	--	6				
		Soapstone, respirable dust	--	3				
		Talc (containing asbestos); see Section 5208						
14807966		Talc (containing no asbestos fibers), respirable dust	--	2				
		Tremolite (containing no asbestos fibers), respirable dust	--	2				
7440213		Silicon; see Particulates not otherwise regulated						
409212		Silicon carbide; SiC; see Particulates not otherwise regulated						
7803625		Silicon tetrahydride; silane	5	7				
7440224		Silver metal, as Ag	--	0.01				
		Silver, soluble compounds, as Ag	--	0.01				
		Soapstone, see Silicates						
26628228 S		Sodium azide	0.1	0.3	C			
7631905		Sodium bisulfite	--	5				
136787		Sodium 2,4-dichlorophenoxyethyl sulfate; see Sesone						
62748 S		Sodium fluoroacetate	--	0.05		--	0.15	
1310732		Sodium hydroxide; caustic soda	--	2	C			
7681574		Sodium metabisulfite	--	5				
822162		Sodium stearate	--	10				
9005258		Starch; see Particulates not otherwise regulated						
7789062		Strontium chromate, as Cr (see also Sections 1532.2, 5206 & 8359)	--	0.0005				
		Stearates; see specific compound						
7803523		Stibine; SbH <sub>3</sub>	0.1	0.5				
8052413		Stoddard solvent	100	525				
57249		Strychnine	--	0.15				
100425 S		Styrene (monomer); phenylethylene	50	215	500 ppm	100	425	
9014011		Subtilisins (as pure crystalline proteolytic enzymes)	--					0.00006 <sup>(r)</sup>
57501		Sucrose; see Particulates not otherwise regulated						
74222972		Sulfometuron methyl	--	3.5				
3689245 S		Sulfotep; tetraethyl dithionopyrophosphate		0.2				
7446095		Sulfur dioxide	2	5		5	10	
2551624		Sulfur hexafluoride	1,000	6,000				
7664939		Sulfuric acid	--	0.1		--	3	
10025679		Sulfur monochloride; S <sub>2</sub> Cl <sub>2</sub>	1	6	C			
5714227		Sulfur pentafluoride; S <sub>2</sub> F <sub>10</sub>	0.01	0.1	C			
7783600		Sulfur tetrafluoride	0.1	0.4	C			
2699798		Sulfuryl fluoride; SO <sub>2</sub> F <sub>2</sub>	5	20		10	40	
35400432		Sulprofos		1				

93765		2,4,5-T;2,4,5-trichlorophenoxyacetic acid	--	10		
		Talc; see Silicates				
7440257		Tantalum metal dust, as Ta	--	5		
1314610		Tantalum oxide dust, as Ta	--	5		
78308		TCP; see Triorthocresyl phosphate				
584849		TDI; see Toluene-2,4-diisocyanate				
3689245	S	TEDP; see Sulfotep				
		Tellurium and compounds, as Te	--	0.1		
7783804		Tellurium hexafluoride	0.02	0.2		
3383968		Temephos; o,o,o',o'-tetramethyl o,o'-thiodi-p-phenylene phosphorothioate				
		Total dust	--	10		
		Respirable fraction <sup>(n)</sup>	--	5		
107493	S	TEPP; tetraethyl pyrophosphate;	0.004	0.05		
100210		Terephthalic acid	--	10		
		Terphenyls	0.5	5	C	
79276		1,1,2,2-Tetrabromoethane; see Acetylene tetrabromide				
76119		1,1,1,2-Tetrachloro-2,2-difluoroethane	500	4170		
76120		1,1,2,2-Tetrachloro-1,2-difluoroethane; fluorocarbon 112	500	4,170		
79345	S	1,1,2,2-Tetrachloroethane; acetylene tetrachloride	1	7		
127184		Tetrachloroethylene; see Perchloroethylene				
56235		Tetrachloromethane; see Carbon tetrachloride				
1335882	S	Tetrachloronaphthalene	--	2		
3689245		Tetraethyl dithionopyrophosphate; see Sulfotep				
78002	S	Tetraethyl lead; tetraethylplumbane, as Pb	--	0.075		
107493		Tetraethyl pyrophosphate; see TEPP				
109999		Tetrahydrofuran	200	590	250	735
75741	S	Tetramethyl lead; tetramethylplumbane, as Pb	--	0.075		
115775		Tetramethylolmethane; see Pentaerythritol				
3333526	S	Tetramethyl succinonitrile (decomposition product of 2,2'-azobisisobutyronitrile)	0.5	3		
137268		Tetramethyl thiuram disulfide, see Thiram				
509148		Tetranitromethane	0.005	0.04		
7722885		Tetrasodium pyrophosphate	--	5		
479458	S	Tetryl; 2,4,6-trinitrophenylmethylnitramine	--	1.5		
	S	Thallium, soluble compounds, as Tl	--	0.1		
109999		THF; see Tetrahydrofuran				
96695		4,4'-Thiobis(6-tert-butyl-m-cresol)	--			
		Total dust	--	10		
		Respirable fraction <sup>(n)</sup>	--	5		
68111	S	Thioglycolic acid	1	3.8		
7719097		Thionyl chloride	1	5	C	
137268		Thiram; bis(dimethylthiocarbamoyl) disulfide	--	5		
	S	Tin, organic compounds, as Sn	--	0.1	--	0.2



21651194		Tin, tin oxide and inorganic compounds, except SnH <sub>4</sub> , as Sn	--	2				
13463677		Titanium dioxide, as Ti; see Particulates not otherwise regulated						
137268		TMTD; see Thiram						
118967		TNT; see 2,4,6-Trinitrotoluene						
108883	S	Toluene; toluol	10	37	500 ppm	150	560	
584849		Toluene-2,4-diisocyanate; TDI	0.005	0.04	0.02 ppm	0.02	0.15	
108441	S	m-Toluidine	2	9				
95534	S	o-Toluidine; o-methylaniline	2	9				
106490	S	p-Toluidine	2	9				
8001352		Toxaphene; see Chlorinated camphene						
115866		TPP; see Triphenyl phosphate						
		Tremolite, nonasbestiform; see Silicates						
75252		Tribromomethane; see Bromoform						
126738		Tributyl phosphate	0.2	2.5				
76039		Trichloroacetic acid	1	5				
120821		1,2,4-Trichlorobenzene	5	40	C			
50293		1,1,1,-Trichloro-2,2-bis(p-chlorophenyl)ethane; see DDT						
71556		1,1,1-Trichloroethane; see Methyl chloroform						
79005	S	1,1,2-Trichloroethane	10	45				
79016		Trichloroethylene; trichloroethene	25	135	300 ppm	100	537	
75694		Trichlorofluoromethane; Fluorocarbon 11	1,000	5,600	C			
67663		Trichloromethane; see Chloroform						
594423		Trichloromethanethiol; see Perchloromethyl mercaptan						
1321659	S	Trichloronaphthalene	--	5				
76062		Trichloronitromethane; see Chloropicrin						
93765		2,4,5-Trichlorophenoxyacetic acid see 2,4,5-T						
96184		1,2,3-Trichloropropane	10	60				
76131		1,1,2-Trichloro-1,2,2- trifluoroethane	1000	7600	2000 ppm	1250	9500	
78308		Tricresyl phosphate; see Triorthocresyl phosphate						
13121705		Tricyclohexyltin hydroxide; see Cyhexatin						
102716		Triethanolamine	--	5				
121448	S	Triethylamine	1	4.1	C			
112492	S	Triethylene glycol dimethyl ether, Triglyme	5	36				
75638		Trifluorobromomethane	1,000	6,100				
2451629		1,3,5-Triglycidyl-s-triazinetriene		0.005				
552307		Trimellitic anhydride	0.005	0.04	C			
75503		Trimethylamine	5	12		15	36	
		Trimethylbenzene, all isomers	25	125				
121459		Trimethyl phosphite	2	10				
88891		2,4,6-Trinitrophenol; see Picric acid						
479458		2,4,6-Trinitrophenylmethyl nitramine;						

		see Tetryl					
118967	S	2,4,6-Trinitrotoluene; TNT	--	0.5			
78308	S	Triorthocresyl phosphate	--	0.1			
603349		Triphenylamine	--	5			
115866	S	Triphenyl phosphate; TPP	--	3			
7440337		Tungsten metal, as W	--	5			
		Tungsten, insoluble compounds, as W	--	5	--	10	
		Tungsten, soluble compounds, as W	--	1	--	3	
8006642		Turpentine	100	560			
		Uranium (natural), insoluble compounds, as U	--	0.2	--	0.6	
		Uranium (natural), soluble compounds, as U	--	0.05			
110623		Valeraldehyde	50	175			
1314621		Vanadium pentoxide (V <sub>2</sub> O <sub>5</sub> ), respirable dust and fume	--	0.05 <sup>(n)</sup>			
75014	S	VC; see Vinyl chloride, Section 5210					
		Vegetable oil mists (except castor, cashew nut or similar irritant oils); see Particulates not otherwise regulated					
108054		Vinyl acetate	10	30		15	45
100425		Vinylbenzene; see Styrene					
593602		Vinyl bromide; bromoethylene	0.1	0.44			
75014	S	Vinyl chloride, see Section 5210	1				
107131	S	Vinyl cyanide, see Acrylonitrile, Section 5213					
100403	S	4-Vinyl cyclohexene	0.1	0.4			
106876	S	Vinyl cyclohexene dioxide	0.1	0.57			
75025		Vinyl fluoride	0.2	0.38			
75354		Vinylidene chloride; 1,1-dichloroethylene	1	4			
75387		Vinylidene fluoride	100	262			
25013154		Vinyltoluene	50	240			
8030306		VM & P (Varnish Makers and Painters) Naphtha	300	1,350		400	1800
81812		Warfarin; 3-(alpha-acetonyl-benzyl)-4-hydroxycoumarin	--	0.1			
		Welding fumes; total particulates (see also individual constituents)	--	5			
		Wood dust	--				
		All soft and hard woods, except Western red cedar	--	5	--	10	
		Wood dust, Western red cedar--	--	2.5			
1330207		Xylene; xylol; dimethylbenzene	100	435	300 ppm	150	655
1477550	S	m-Xylene-a,a'-diamine	--	0.1	C		
1300738	S	Xylidine; aminodimethylbenzene	0.5	2.5			
		Yttrium compounds, as Y	--	1			
7646857		Zinc chloride fume	--	1	--	2	
13530659		Zinc chromate, as Cr	--	0.005			
		(see also Sections 1532.2, 5206 & 8359)					
15930946		Zinc chromate hydroxide, as Cr	--	0.005			
		(see also Sections 1532.2, 5206 & 8359)					

1314132	Zinc oxide fume	--	5	--	10
	Zinc oxide dust, see Particulates not otherwise regulated				
11103869	Zinc potassium chromate, as Cr (see also Sections 1532.2, 5206 & 8359)	--	0.005		
557051	Zinc stearate	--	10		
37300235	Zinc yellow, as Cr (see also Sections 1532.2, 5206 & 8359)	--	0.005		
	Zirconium compounds, as Zr	--	5	--	10