Chapter 296-841 WAC
AIRBORNE CONTAMINANTS

WAC

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WAC 296-841-100 Scope. This chapter applies when your employees are, or could be, exposed to an airborne hazard.

• The following are examples of airborne contaminants that may become airborne hazards in some workplaces:

– Chemicals listed in Table 3, Permissible Exposure Limits (PELs) for Airborne Contaminants

– Any substance:

■ Listed in the latest edition of the NIOSH Registry of Toxic Effects of Chemical Substances

■ For which positive evidence of an acute or chronic health hazard exists through tests conducted by, or known to, the employer

■ That may pose a hazard to human health as stated on a material safety data sheet (MSDS) kept by, or known to, the employer

– Biological agents such as harmful bacteria, viruses or fungi

■ Examples include TB aerosols and anthrax

– Pesticides

– Chemicals used as crowd control agents, such as pepper spray

– Chemicals present at clandestine drug labs.

• Airborne contaminants exist in a variety of physical forms such as dusts, fibers, fogs, fumes, mists, gases, smoke, sprays, vapors, or aerosols.

Definition:

Exposed or exposure:

The contact an employee has with a toxic substance, harmful physical agent or oxygen-deficient condition, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry, such as inhalation, ingestion, skin contact, or skin absorption.

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WAC 296-841-200 Evaluate and control employee exposures.

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WAC 296-841-20003 Employee protective measures. Protect employees from potentially hazardous exposure while you perform your exposure evaluation, using all available resources to determine adequate protective measures.

Note: • Resources include product labels, material safety data sheets (MSDSs), manufacturer recommendations, and industry protocols.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-841-20003, filed 2/20/07, effective 4/1/07.]

WAC 296-841-20005 Exposure evaluations. (1) Conduct an exposure evaluation to determine or reasonably estimate whether an employee is or could be exposed to either of the following:

– An airborne contaminant above a permissible exposure limit (PEL) listed in Table 3;

OR

– Other airborne hazards, such as biological hazards.

Note: • When evaluating air contaminants, keep in mind that oxygen deficient conditions may also occur due to:
– Processes such as fermentation, decomposition of organic matter, or combustion of fossil fuels
– Displacement by another gas such as nitrogen or carbon dioxide
• Rules for specific substances may contain additional requirements for determining employee exposure
• Samples from a representative group of employees may be used for other employees performing the same work activities, when the duration and level of exposure are similar.

(2) Conclude that an atmosphere is immediately dangerous to life or health (IDLH) when you cannot determine or reasonably estimate employee exposure.

(3) Do all the following when you perform your evaluation:

(a) Determine the form of the airborne contaminant, such as dust, mist, gas, or biological agent.

(b) Make sure you don't use the amount of protection provided to employees by respirators as a factor in determining whether employees are exposed to an airborne hazard.

(c) Make sure any air monitoring results used to determine employee exposures are based on personal air samples taken from, or representative of, the employee's breathing zone.

■ You may use area sampling to screen for the presence of an airborne contaminant; however, results from area sampling can't be used if they don't adequately represent exposure of affected employees.

(d) Include potential emergency and rescue situations that may occur, such as equipment or power failures, uncontrolled chemical reactions, fire, explosion, or human error.

(e) Include workplace conditions such as work processes, types of material, exposure control methods, work practices, and environmental conditions.

(f) Address extended work periods. For work shifts longer than eight hours, evaluate the continuous eight-hour por-

tion of the shift expected to have the highest average exposure concentration.

(4) Use either of the following types of documentation to conclusively demonstrate that employee exposure cannot meet or exceed any PEL for the airborne contaminant during any reasonably anticipated conditions:

– Personal air samples that represent an employee's usual or worst-case exposure during the entire shift.

OR

– Specific information about products, materials, or activities that provides for an estimate of the level of employee exposure such as material safety data sheets (MSDSs), observations, previous air sampling results, other measurements, calculations, or pesticide labels.

Note: • You should use methods of sampling and analysis that have been validated by the laboratory performing the analysis.

(5) Use the following formula to evaluate employee exposure to two or more substances that have additive health effects:

$$E_m = \frac{C_1}{L_1} + \frac{C_2}{L_2} + \ldots + \frac{C_n}{L_n}$$

The symbol	Is the . . .
E	Equivalent exposure for the mixture. **When the value of E is greater than 1, an airborne hazard is present.**
C	Concentration of a specific airborne contaminant.
L	TWA_8, STEL, or ceiling limit for that airborne contaminant, from Table 3, Permissible Exposure Limits (PELs) for Airborne Contaminants.

Note: • When results from your exposure evaluation indicate an airborne hazard, follow requirements in WAC 296-841-20010 through 296-841-20020 of this chapter.

• When changes occur that increase the level of exposure to an airborne hazard, you may need to conduct a new exposure evaluation to make sure exposure controls and other protective measures are sufficient.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-841-20005, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-20005, filed 8/31/04, effective 11/1/04; 03-20-115, § 296-841-20005, filed 10/1/03, effective 1/1/04.]

WAC 296-841-20010 Exposure controls.

IMPORTANT:

• Respirators and other personal protective equipment are **not** exposure controls. Respirators may be used to protect employees while exposure controls are being installed or when it's not feasible to use exposure controls to remove or reduce the airborne hazard.

(1) Use feasible exposure controls to reduce employee exposure to one of the following:

– A level below the permissible exposure limits (PEL) in Table 3

– A level that removes the airborne hazard, when no PEL is established

– The lowest achievable level, when exposure cannot be reduced to below the PEL or the airborne hazard can't be removed.

(2) Make sure exposure controls don't create or increase employee health hazards. For example, when ventilation systems are installed:

– Prevent contaminated exhaust air from either:

■ Reentering the building in harmful amounts

or

■ Exposing any employee to a health hazard.

– Temper make-up air, when necessary

– Prevent employee exposure to excessive air velocities.

(3) Use make-up air systems that will not interfere with the effectiveness of the exhaust air system.

– For example, make sure enough make-up air is provided to replace the amount of air exhausted.

Note: • Table 1 provides examples of possible exposure controls.

Table 1
Examples of Possible Controls

Preferred exposure controls include:	**For example:**
Using a different chemical (this is also known as substitution)	• Choose a chemical with a lower evaporation rate or vapor pressure • Choose a chemical that's not hazardous
Changing a process to decrease emissions	• Use hand rolling or paint dipping instead of paint spraying • Bolt items instead of welding them
Separating employees from emissions areas and sources	• Use control rooms • Build an enclosure around process machinery or other emissions sources • Automate a process
Using **local** exhaust ventilation to remove emissions at or near the source	• Install exhaust hoods or slots to capture emissions • Use an exhausted enclosure (like a blasting cabinet or laboratory hood)
Other exposure controls include:	**For example:**
Using **general** exhaust ventilation to dilute and remove emissions in the work area **Note:** This isn't recommended for control of highly toxic airborne contaminants such as carcinogens, where low exposures can still present a health hazard	• Allow natural air movement to create an adequate airflow through an area • Use mechanical fans
Modifying work practices	• Change the position of the employee relative to the work so fumes, vapors, or smoke aren't directed into the employee's face

Limiting the amount of time employees can spend in a contaminated area.	• Establish a contaminant-free area for tasks such as prep work that don't need to be done in the exposure area
Implementing an employee rotation schedule **Note:** This control will increase the number of employees exposed to the airborne contaminant. Due to this risk, employee rotation is NOT recommended for highly toxic airborne contaminants such as carcinogens, where low exposures can still present a health hazard.	Have employees alternate working in the exposure area so that each employee gets less overall exposure

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-841-20010, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-20010, filed 8/31/04, effective 11/1/04; 03-20-115, § 296-841-20010, filed 10/1/03, effective 1/1/04.]

WAC 296-841-20015 Respirators. Require employees to use respirators when airborne hazards have not been removed using feasible exposure controls. For example, use respirators at any of the following times:

– While exposure controls are being evaluated or put in place

– When the airborne hazard is not completely removed

– When exposure controls are **NOT** feasible.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-841-20015, filed 2/20/07, effective 4/1/07; 03-20-115, § 296-841-20015, filed 10/1/03, effective 1/1/04.]

WAC 296-841-20020 Notification. Notify employees who are or may be exposed to airborne hazards, as specified in Table 2.

Note: • The notification may be provided either individually, to a group, or by posting of results in an appropriate location that is accessible to affected employees.

Table 2
Notification Requirements

Notify employees of:	As follows:
Any exposure result above a permissible exposure limit (PEL)	Within five business days, after the employee's exposure result is known to the employer
The corrective action being taken to reduce employee exposure to or below the PEL **AND** The schedule for completion of the corrective action and any reasons why exposures cannot be lowered to below the PEL	Within fifteen business days, after the employee's exposure result is known to the employer

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-841-20020, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-20020, filed 8/31/04, effective 11/1/04; 03-20-115, § 296-841-20020, filed 10/1/03, effective 1/1/04.]

WAC 296-841-20025 Permissible exposure limits (PELs).

IMPORTANT:

The following information applies to Table 3, Permissible Exposure Limits (PELs) for Airborne Contaminants.

• Ppm refers to parts of vapor or gas per million parts of air by volume, at 25 degrees C and 760 mm Hg pressure.

• Mg/m^3 refers to milligrams of an airborne contaminant per cubic meter of air.

• F/cc refers to fibers per cubic centimeter of air.

• For a metal that is measured as the metal itself, only the CAS number for the metal is given. The CAS numbers for individual compounds of the metal are not provided. For more information about CAS registry numbers see the web site: http://www.cas.org.

• Short-term exposure limits (STEL) pertain to fifteen-minute exposure periods, unless another time period is noted in Table 3.

• An "X" in the "skin" column indicates the contaminant can be absorbed through the skin, either by airborne or direct contact.

– Personal protective equipment (PPE) to prevent skin contact may be needed to minimize the risk for adverse health effects when employees are exposed to these chemicals.

– Requirements for the use of gloves, coveralls, goggles, and other personal protective equipment can be found in WAC 296-800-160, Personal protective equipment (PPE).

• Nuisance dusts (also known as inert dusts) are included in the Table 3 listing, particulates not otherwise regulated (PNOR).

– The PNOR listing in Table 3 also applies to other particulate airborne contaminants for which a specific PEL is NOT listed **unless** the airborne contaminant is found to require a lower limit.

• The respirable fraction of a particulate airborne contaminant is measured by sampling with a size-selector having the following characteristics:

Mean aerodynamic diameter in micrometers	Percent passing the selector
1	97
2	91
3	74
4	50
5	30
6	17
7	9
8	5
10	1

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Abate (Temephos)	3383-96-8	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Acetaldehyde	75-07-0	100 ppm	150 ppm	——	——
Acetic acid	64-19-7	10 ppm	20 ppm	——	——
Acetic anhydride	108-24-7	——	——	5 ppm	——
Actinolite (asbestiform) (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
Acetone	67-64-1	750 ppm	1,000 ppm	——	——
Acetonitrile	75-05-8	40 ppm	60 ppm	——	——
2-Acetylaminofluorene (see WAC 296-62-073)	53-96-3	——	——	——	——
Acetylene	74-86-2	Simple asphyxiant	——	——	——
Acetylene dichloride (1,2-Dichloroethylene)	540-59-0	200 ppm	250 ppm	——	——
Acetylene tetrabromide	79-27-6	1 ppm	3 ppm	——	——
Acetylsalicylic acid (Aspirin)	50-78-2	5 mg/m^3	10 mg/m^3	——	——
Acrolein	107-02-8	0.1 ppm	0.3 ppm	——	——
Acrylamide	79-06-1	0.03 mg/m^3	0.09 mg/m^3	——	X
Acrylic acid	79-10-7	10 ppm	20 ppm	——	X
Acrylonitrile (Vinyl cyanide) (see WAC 296-62-07336)	107-13-1	2 ppm	10 ppm	——	——
Aldrin	309-00-2	0.25 mg/m^3	0.75 mg/m^3	——	X
Allyl alcohol	107-18-6	2 ppm	4 ppm	——	X
Allyl chloride	107-05-1	1 ppm	2 ppm	——	——
Allyl glycidyl ether (AGE)	106-92-3	5 ppm	10 ppm	——	——
Allyl propyl disulfide	2179-59-1	2 ppm	3 ppm	——	——
alpha-Alumina (Aluminum oxide)	1344-28-1	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Aluminum (as Al)	7429-90-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Pyro powders	——	5 mg/m^3	10 mg/m^3	——	——
Welding fumes	——	5 mg/m^3	10 mg/m^3	——	——
Soluble salts	——	2 mg/m^3	4 mg/m^3	——	——
Alkyls (NOC)	——	2 mg/m^3	4 mg/m^3	——	——
Aluminum oxide (Alundum, Corundum)	7429-90-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
4-Aminodiphenyl (see WAC 296-62-073)	92-67-1	——	——	——	——
2-Aminoethanol (Ethanolamine)	141-43-5	3 ppm	6 ppm	——	——
2-Aminopyridine	504-29-0	0.5 ppm	1.5 ppm	——	——
Amitrole	61-82-5	0.2 mg/m^3	0.6 mg/m^3	——	——
Ammonia	7664-41-7	25 ppm	35 ppm	——	——
Ammonium chloride, fume	12125-02-9	10 mg/m^3	20 mg/m^3	——	——
Ammonium sulfamate (Ammate)	7773-06-0	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5.0 mg/m^3	10 mg/m^3	——	——
Amosite (as asbestos) (see WAC 296-62-077 and and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
n-Amyl acetate	628-63-7	100 ppm	150 ppm	——	——
sec-Amyl acetate	626-38-0	125 ppm	156 ppm	——	——
Aniline and homologues	62-53-3	2 ppm	4 ppm	——	X
Anisidine (o, p-isomers)	29191-52-4	0.1 ppm	0.3 ppm	——	X
Anthophyllite (asbestiform) (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
Antimony and compounds (as Sb)	7440-36-0	0.5 mg/m^3	1.5 mg/m^3	——	——
ANTU (alpha Naphthyl thiourea)	86-88-4	0.3 mg/m^3	0.9 mg/m^3	——	——
Argon	7440-37-1	Simple asphyxiant	——	——	——
Arsenic, organic compounds (as As)	7440-38-2	0.2 mg/m^3	0.6 mg/m^3	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Arsenic, inorganic compounds (as As) (when use is covered by chapter 296-848 WAC)	7440-38-2	0.01 mg/m^3	——	——	——
Arsenic, inorganic compounds (as As) (when use is not covered by chapter 296-848 WAC)	7440-38-2	0.2 mg/m^3	0.6 mg/m^3	——	——
Arsine	7784-42-1	0.05 ppm	0.15 ppm	——	——
Asbestos (see WAC 296-62-077 and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
Asphalt (Petroleum fumes)	8052-42-4	5 mg/m^3	10 mg/m^3	——	——
Atrazine	1912-24-9	5 mg/m^3	10 mg/m^3	——	——
Azinphos methyl (Guthion)	86-50-0	0.2 mg/m^3	0.6 mg/m^3	——	X
Azodrin (Monocrotophos)	6923-22-4	0.25 mg/m^3	0.75 mg/m^3	——	——
Barium, soluble compounds (as Ba)	7440-39-3	0.5 mg/m^3	1.5 mg/m^3	——	——
Barium sulfate	7727-43-7	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Baygon (Propoxur)	114-26-1	0.5 mg/m^3	1.5 mg/m^3	——	——
Benomyl	17804-35-2	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Benzene (see chapter 296-849 WAC)	71-43-2	1 ppm	5 ppm	——	——
Benzidine (see WAC 296-62-073)	92-87-5	——	——	——	——
p-Benzoquinone (Quinone)	106-51-4	0.1 ppm	0.3 ppm	——	——
Benzo(a) pyrene (Coal tar pitch volatiles)	65996-93-2	0.2 mg/m^3	0.6 mg/m^3	——	——
Benzoyl peroxide	94-36-0	5 mg/m^3	10 mg/m^3	——	——
Benzyl chloride	100-44-7	1ppm	3 ppm	——	——
Beryllium and beryllium compounds (as Be)	7440-41-7	0.002 mg/m^3	0.005 mg/m^3 (30 min.)	0.025 mg/m^3	——
Biphenyl (Diphenyl)	92-52-4	0.2 ppm	0.6 ppm	——	——
Bismuth telluride, undoped	1304-82-1	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Bismuth telluride, Se-doped	——	5 mg/m^3	10 mg/m^3	——	——
Borates, tetra, sodium salts	——	——	——	——	——
Anhydrous	1330-43-4	1 mg/m^3	3 mg/m^3	——	——
Decahydrate	1303-96-4	5 mg/m^3	10 mg/m^3	——	——
Pentahydrate	12179-04-3	1 mg/m^3	3 mg/m^3	——	——
Boron oxide	1303-86-2	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Boron tribromide	10294-33-4	——	——	1 ppm	——
Boron trifluoride	6737-07-2	——	——	1 ppm	——
Bromacil	314-40-9	1 ppm	3 ppm	——	——
Bromine	7726-95-6	0.1 ppm	0.3 ppm	——	——
Bromine pentafluoride	7789-30-2	0.1 ppm	0.3 ppm	——	——
Bromochloromethane (Chlorobromomthane)	74-97-5	200 ppm	250 ppm	——	——
Bromoform	15-25-2	0.5 ppm	1.5 ppm	——	X
Butadiene (1,3-butadiene) (see WAC 296-62-07460)	106-99-0	1 ppm	5 ppm	——	——
Butane	106-97-8	800 ppm	1,000 ppm	——	——
Butanethiol (Butyl mercaptan)	109-79-5	0.5 ppm	1.5 ppm	——	——
2-Butanone (Methyl ethyl ketone)	78-93-3	200 ppm	300 ppm	——	——
2-Butoxy ethanol (Butyl cellosolve)	111-76-2	25 ppm	38 ppm	——	X
n-Butyl acetate	123-86-4	150 ppm	200 ppm	——	——
sec-Butyl acetate	105-46-4	200 ppm	250 ppm	——	——
tert-Butyl acetate	540-88-5	200 ppm	250 ppm	——	——
Butyl acrylate	141-32-2	10 ppm	20 ppm	——	——
n-Butyl alcohol	71-36-3	——	——	50 ppm	X
sec-Butyl alcohol	78-92-2	100 ppm	150 ppm	——	——
tert-Butyl alcohol	75-65-0	100 ppm	150 ppm	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Butylamine	109-73-9	——	——	5 ppm	X
Butyl cellosolve (2-Butoxy ethanol)	111-76-2	25 ppm	38 ppm	——	——
tert-Butyl chromate (as Cr) (see WAC 296-62-08003)	1189-85-1	0.005 mg/m^3	——	0.1 mg/m^3	X
n-Butyl glycidyl ether (BGE)	2426-08-6	25 ppm	38 ppm	——	——
n-Butyl lactate	138-22-7	5 ppm	10 ppm	—-	——
Butyl mercaptan	109-79-5	0.5 ppm	1.5 ppm	——	——
o-sec-Butylphenol	89-72-5	5 ppm	10 ppm	——	X
p-tert-Butyl-toluene	98-51-1	10 ppm	20 ppm	——	——
Cadmium oxide fume (as Cd) (see WAC 296-62-074 and 296-155-174)	1306-19-0	0.005 mg/m^3	——	——	——
Cadmium dust and salts (as Cd) (see WAC 296-62-074 and 296-155-174)	7440-43-9	0.005 mg/m^3	——	——	——
Calcium arsenate (see chapter 296-848 WAC)	——	0.01 mg/m^3	——	——	——
Calcium carbonate	1317-65-3	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Calcium cyanamide	156-62-7	0.5 mg/m^3	1.5 mg/m^3	——	——
Calcium hydroxide	1305-62-0	5 mg/m^3	10 mg/m^3	——	——
Calcium oxide	1305-78-8	2 mg/m^3	4 mg/m^3	——	——
Calcium silicate	1344-95-2	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Calcium sulfate	7778-18-9	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Camphor (synthetic)	76-22-2	2 mg/m^3	4 mg/m^3	——	——
Caprolactam	105-60-2	——	——	——	——
Dust	——	1 mg/m^3	3 mg/m^3	——	——
Vapor	——	5 ppm	10 ppm	——	——
Captafol (Difolatan)	2425-06-1	0.1 mg/m^3	0.3 mg/m^3	——	X
Captan	133-06-2	5 mg/m^3	10 mg/m^3	——	——
Carbaryl (Sevin)	63-25-2	5 mg/m^3	10 mg/m^3	——	——
Carbofuran (Furadon)	1563-66-2	0.1 mg/m^3	0.3 mg/m^3	——	——
Carbon black	1333-86-4	3.5 mg/m^3	7 mg/m^3	——	——
Carbon dioxide	124-38-9	5,000 ppm	30,000 ppm	——	——
Carbon disulfide	75-15-0	4 ppm	12 ppm	——	X
Carbon monoxide	630-08-0	35 ppm	200 ppm (5 min.)	1,500 ppm	——
Carbon tetrabromide	558-13-4	0.1 ppm	0.3 ppm	——	——
Carbon tetrachloride (Tetrachloromethane)	56-23-5	2 ppm	4 ppm	——	X
Carbonyl chloride (Phosgene)	7803-51-2	0.1 ppm	0.3 ppm	——	——
Carbonyl fluoride	353-50-4	2 ppm	5 ppm	——	——
Catechol (Pyrocatechol)	120-80-9	5 ppm	10 ppm	——	X
Cellosolve acetate (2-Ethoxyethylacetate)	111-15-9	5 ppm	10 ppm	——	X
Cellulose (paper fiber)	9004-34-6	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Cesium hydroxide	21351-79-1	2 mg/m^3	4 mg/m^3	——	——
Chlordane	57-74-9	0.5 mg/m^3	1.5 mg/m^3	——	X
Chlorinated camphene (Toxaphen)	8001-35-2	0.5 mg/m^3	1 mg/m^3	——	X
Chlorinated diphenyl oxide	55720-99-5	0.5 mg/m^3	1.5 mg/m^3	——	——
Chlorine	7782-50-5	0.5 ppm	——	1 ppm	——
Chlorine dioxide	10049-04-4	0.1 ppm	0.3 ppm	——	——
Chlorine trifluoride	7790-91-2	——	——	0.1 ppm	——
Chloroacetaldehyde	107-20-0	——	——	1 ppm	——
a-Chloroacetophenone (Phenacyl chloride)	532-21-4	0.05 ppm	0.15 ppm	——	——
Chloroacetyl chloride	79-04-9	0.05 ppm	0.15 ppm	——	——
Chlorobenzene (Monochlorobenzene)	108-90-7	75 ppm	113 ppm	——	——
o-Chlorobenzylidene malononitrile (OCBM)	2698-41-1	——	——	0.05 ppm	X
Chlorobromomethane	74-97-5	200 ppm	250 ppm	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
2-Chloro-1, 3-butadiene (beta-Chloroprene)	126-99-8	10 ppm	20 ppm	——	X
Chlorodifluoromethane	75-45-6	1,000 ppm	1,250 ppm	——	——
Chlorodiphenyl (42% Chlorine) (PCB) (Polychlorobiphenyls)	53469-21-9	1 mg/m^3	3 mg/m^3	——	X
Chlorodiphenyl (54% Chlorine) (Polychlorobiphenyls (PCB))	11097-69-1	0.5 mg/m^3	1.5 mg/m^3	——	X
1-Chloro-2, 3-epoxypropane (Epichlorhydrin)	106-89-8	2 ppm	4 ppm	——	X
2-Chloroethanol (Ethylene chlorohydrin)	107-07-3	——	——	1 ppm	X
Chloroethylene (vinyl chloride) (See WAC 296-62-07329)	75-01-4	1 ppm	5 ppm	——	——
Chloroform (Trichloromethane)	67-66-3	2 ppm	4 ppm	——	——
1-Chloro-1-nitropropane	600-25-9	2 ppm	4 ppm	——	——
bis-Chloromethyl ether (see WAC 296-62-073)	542-88-1	——	——	——	——
Chloromethyl methyl ether (Methyl chloromethyl ether) (see WAC 296-62-073)	107-30-2	——	——	——	——
Chloropentafluoroethane	76-15-3	1,000 ppm	1,250 ppm	——	——
Chloropicrin (Nitrotrichloromethane)	76-06-2	0.1 ppm	0.3 ppm	——	——
beta-Chloroprene (2-Chloro-1, 3-butadiene)	126-99-8	10 ppm	20 ppm	——	X
o-Chlorostyrene	2039-87-4	50 ppm	75 ppm	——	——
o-Chlorotoluene	95-49-8	50 ppm	75 ppm	——	——
2-Chloro-6-trichloromethyl pyridine (Nitrapyrin)	1929-82-4	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Chlorpyrifos	2921-88-2	0.2 mg/m^3	0.6 mg/m^3	——	X
Chromic acid and chromates (as Cr) (when the compound is not covered by WAC 296-62-08003)	Varies with compound	——	——	0.1 mg/m^3	——
Chromium	——	——	——	——	——
Chromium (VI) compounds (as Cr) (when the compound is covered by WAC 296-62-08003)	——	0.005 mg/m^3	——	——	——
Chromium metal or Chromium (II) compounds Or Chromium (III) compounds	7440-47-3	0.5 mg/m^3	——	——	——
Chromyl chloride (as Cr) (see WAC 296-62-08003)	14977-61-8	0.005 mg/m^3	——	——	——
Chrysene (Coal tar pitch volatiles)	65996-93-2	0.2 mg/m^3	0.6 mg/m^3	——	——
Chrysotile (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
Clopidol	2971-90-6	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Coal dust (less than 5% SiO2)	——	——	——	——	——
Respirable fraction	——	2 mg/m^3	4 mg/m^3	——	——
Coal dust (greater than or equal to 5% SiO2)	——	——	——	——	——
Respirable fraction	——	0.1 mg/m^3	0.3 mg/m^3	——	——
Coal tar pitch volatiles (benzene soluble fraction) Acridine Anthracene Benzo (a) pyrene Chrysene Phenanthrene Pyrene	65996-93-2	0.2 mg/m^3	0.6 mg/m^3	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Cobalt, metal fume & dust (as Co)	7440-48-4	0.05 mg/m^3	0.15 mg/m^3	——	——
Cobalt carbonyl (as Co)	10210-68-1	0.1 mg/m^3	0.3 mg/m^3	——	——
Cobalt hydrocarbonyl (as Co)	16842-03-8	0.1 mg/m^3	0.3 mg/m^3	——	——
Coke oven emissions (see WAC 296-62-200)	——	0.15 mg/m^3	——	——	——
Copper (as Cu)	7440-50-8	——	——	——	——
Fume	——	0.1 mg/m^3	0.3 mg/m^3	——	——
Dusts and mists	——	1 mg/m^3	3 mg/m^3	——	——
Cotton dust (raw) (waste sorting, blending, cleaning, willowing and garetting) (see WAC 296-62-14533)	——	1 mg/m^3	——	——	——
Corundum (Aluminum oxide)	7429-90-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Crag herbicide (Sesone, Sodium-2, 4-dichloro-phenoxyethyl sulfate)	136-78-7	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Cresol (all isomers)	1319-77-3	5 ppm	10 ppm	——	X
Crocidolite (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
Crotonaldehyde	123-73-9; 4170-30-3	2 ppm	4 ppm	——	——
Crufomate	299-86-5	5 mg/m^3	10 mg/m^3	——	——
Cumene	98-82-8	50 ppm	75 ppm	——	X
Cyanamide	420-04-2	2 mg/m^3	4 mg/m^3	——	——
Cyanide (as CN)	Varies with compound	5 mg/m^3	10 mg/m^3	——	X
Cyanogen	460-19-5	10 ppm	20 ppm	——	——
Cyanogen chloride	506-77-4	——	——	0.3 ppm	——
Cyclohexane	110-82-7	300 ppm	375 ppm	——	——
Cyclohexanol	108-93-0	50 ppm	75 ppm	——	X
Cyclohexanone	108-94-1	25 ppm	38 ppm	——	X
Cyclohexene	110-83-8	300 ppm	375 ppm	——	——
Cyclohexylamine	108-91-8	10 ppm	20 ppm	——	——
Cyclonite (RDX)	121-82-4	1.5 mg/m^3	3.0 mg/m^3	——	X
Cyclopentadiene	542-92-7	75 ppm	113 ppm	——	——
Cyclopentane	287-92-3	600 ppm	750 ppm	——	——
Cyhexatin (Tricyclohexyltin hydroxide)	13121-70-5	5 mg/m^3	10 mg/m^3	——	——
2,4-D (Dichlorophenoxy-acetic acid)	94-75-7	10 mg/m^3	20 mg/m^3	——	——
DBCP (1,2-Dibromo-3-chloropropane) (See WAC 296-62-07342)	96-12-8	0.001 ppm	——	0.005 ppm	——
DDT (Dichlorodiphenyltri-chloroethane)	50-29-3	1 mg/m^3	3 mg/m^3	——	X
DDVP, (Dichlorvos)	62-73-7	0.1 ppm	0.3 ppm	——	X
Dasanit (Fensulfothion)	115-90-2	0.1 mg/m^3	0.3 mg/m^3	——	——
Decaborane	17702-41-9	0.05 ppm	0.15 ppm	——	X
Demeton	8065-48-3	0.01 ppm	0.03 ppm	——	X
Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	123-42-2	50 ppm	75 ppm	——	——
1, 2-Diaminoethane (Ethylenediamine)	107-15-3	10 ppm	20 ppm	——	——
Diazinon	333-41-5	0.1 mg/m^3	0.3 mg/m^3	——	X
Diazomethane	334-88-3	0.2 ppm	0.6 ppm	——	——
Diborane	19287-45-7	0.1 ppm	0.3 ppm	——	——
Dibrom (see Naled)	300-76-5	3 mg/m^3	6 mg/m^3	——	X
1, 2-Dibromo-3-chloropropane (DBCP) (see WAC 296-62-07342)	96-12-8	0.001 ppm	——	0.005 ppm	——
2-N-Dibutylamino ethanol	102-81-8	2 ppm	4 ppm	——	X
Dibutyl phosphate	107-66-4	1 ppm	2 ppm	——	——
Dibutyl phthalate	84-74-2	5 mg/m^3	10 mg/m^3	——	——
Dichloroacetylene	7572-29-4	——	——-	0.1 ppm	——
o-Dichlorobenzene	95-50-1	——	——	50 ppm	——
p-Dichlorobenzene	106-46-7	75 ppm	110 ppm	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
3, 3'-Dichlorobenzidine (see WAC 296-62-073)	91-94-1	——	——	——	——
Dichlorodiphenyltri-chloroethane (DDT)	50-29-3	1 mg/m^3	3 mg/m^3	——	X
Dichlorodifluoromethane	75-71-8	1,000 ppm	1,250 ppm	——	——
1, 3-Dichloro-5, 5-dimethyl hydantoin	118-52-5	0.2 mg/m^3	0.4 mg/m^3	——	——
1, 1-Dichloroethane (Ethylidine chloride)	75-34-3	100 ppm	150 ppm	——	——
1, 2-Dichloroethane (Ethylene dichloride)	107-06-2	1 ppm	2 ppm	——	——
1, 1-Dichloroethylene (Vinylidene chloride)	75-35-4	1 ppm	3 ppm	——	——
1, 2-Dichloroethylene (Acetylene dichloride)	540-59-0	200 ppm	250 ppm	——	——
Dichloroethyl ether	111-44-4	5 ppm	10 ppm	——	X
Dichlorofluoromethane	75-43-4	10 ppm	20 ppm	——	——
Dichloromethane (Methylene chloride) (See chapter 296-859 WAC)	75-09-2	25 ppm	125 ppm	——	——
1, 1-Dichloro-1-nitroethane	594-72-9	2 ppm	10 ppm	——	——
Dichlorophenoxyacetic acid (2, 4-D)	94-75-7	10 mg/m^3	20 mg/m^3	——	——
1, 2-Dichloropropane (Propylene dichloride)	78-87-5	75 ppm	110 ppm	——	——
Dichloropropene	542-75-6	1 ppm	3 ppm	——	X
2, 2-Dichloropropionic acid	75-99-0	1 ppm	3 ppm	——	——
Dichlorotetrafluoroethane	76-14-2	1,000 ppm	1,250 ppm	——	——
Dichlorvos (DDVP)	62-73-7	0.1 ppm	0.3 ppm	——	X
Dicrotophos	141-66-2	0.25 mg/m^3	0.75 mg/m^3	——	X
Dicyclopentadiene	77-73-6	5 ppm	10 ppm	——	——
Dicyclopentadienyl iron	102-54-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Dieldrin	60-57-1	0.25 mg/m^3	0.75 mg/m^3	——	X
Diethanolamine	111-42-2	3 ppm	6 ppm	——	——
Diethylamine	109-89-7	10 ppm	25 ppm	——	——
2-Diethylaminoethanol	100-37-8	10 ppm	20 ppm	——	X
Diethylene triamine	111-40-0	1 ppm	3 ppm	——	X
Diethyl ether (Ethyl ether)	60-29-7	400 ppm	500 ppm	——	——
Diethyl ketone	96-22-0	200 ppm	250 ppm	——	——
Diethyl phthalate	84-66-2	5 mg/m^3	10 mg/m^3	——	——
Difluorodibromomethane	75-61-6	100 ppm	150 ppm	——	——
Difolatan (Captafol)	2425-06-1	0.1 mg/m^3	0.3 mg/m^3	——	X
Diglycidyl ether (DGE)	2238-07-5	0.1 ppm	0.3 ppm	——	——
Dihydroxybenzene (Hydroquinone)	123-31-9	2 mg/m^3	4 mg/m^3	——	——
Diisobutyl ketone (2, 6-Dimethylheptanone)	108-83-8	25 ppm	38 ppm	——	——
Diisopropylamine	108-18-9	5 ppm	10 ppm	——	X
Dimethoxymethane (Methylal)	109-87-5	1,000 ppm	1,250 ppm	——	——
Dimethyl acetamide	127-19-5	10 ppm	20 ppm	——	X
Dimethylamine	124-40-3	10 ppm	20 ppm	——	——
4-Dimethylaminoazo benzene (see WAC 296-62-073)	60-11-7	——	——	——	——
Dimethylaminobenzene (Xylidene)	1300-73-8	2 ppm	4 ppm	——	X
Dimethylaniline (N, N-Dimethylaniline)	121-69-7	5 ppm	10 ppm	——	X
Dimethylbenzene (Xylene)	1300-73-8	100 ppm	150 ppm	——	——
Dimethyl-1, 2-dibromo-2, 2-dichloroethyl phosphate (Naled)	300-76-5	3 mg/m^3	6 mg/m^3	——	X
Dimethylformamide	68-12-2	10 ppm	20 ppm	——	X
2, 6-Dimethylheptanone (Diisobutyl ketone)	108-83-8	25 ppm	38 ppm	——	——
1, 1-Dimethylhydrazine	57-14-7	0.5 ppm	1.5 ppm	——	X
Dimethyl phthalate	131-11-3	5 mg/m^3	10 mg/m^3	——	——
Dimethyl sulfate	77-78-1	0.1 ppm	0.3 ppm	——	X
Dinitolmide (3, 5-Dinitro-o-toluamide)	148-01-6	5 mg/m^3	10 mg/m^3	——	——
Dinitrobenzene (all isomers - alpha, meta and para)	528-29-0; 99-65-0; 100-25-4	0.15 ppm	0.45 ppm	——	X

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Dinitro-o-cresol	534-52-1	0.2 mg/m^3	0.6 mg/m^3	——	X
3, 5-Dinitro-o-toluamide (Dinitolmide)	148-01-6	5 mg/m^3	10 mg/m^3	——	——
Dinitrotoluene	25321-14-6	1.5 mg/m^3	3 mg/m^3	——	X
Dioxane (Diethylene dioxide)	123-91-1	25 ppm	38 ppm	——	X
Dioxathion	78-34-2	0.2 mg/m^3	0.6 mg/m^3	——	X
Diphenyl (Biphenyl)	92-52-4	0.2 ppm	0.6 ppm	——	——
Diphenylamine	122-39-4	10 mg/m^3	20 mg/m^3	——	——
Diphenylmethane diisocyanate (Methylene bisphenyl isocyanate (MDI))	101-68-8	——	——	0.02 ppm	——
Dipropylene glycol methyl ether	34590-94-8	100 ppm	150 ppm	——	X
Dipropyl ketone	123-19-3	50 ppm	75 ppm	——	——
Diquat	85-00-7	0.5 mg/m^3	1.5 mg/m^3	——	——
Di-sec, Octyl phthalate (Di-2-ethylhexylphthalate)	117-81-7	5 mg/m^3	10 mg/m^3	——	——
Disulfram	97-77-8	2 mg/m^3	4 mg/m^3	——	——
Disulfoton	298-04-4	0.1 mg/m^3	0.3 mg/m^3	——	X
2, 6-Di-tert-butyl-p-cresol	128-37-0	10 mg/m^3	20 mg/m^3	——	——
Diuron	330-54-1	10 mg/m^3	20 mg/m^3	——	——
Divinyl benzene	1321-74-0	10 ppm	20 ppm	——	——
Emery	12415-34-8	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Endosulfan (Thiodan)	115-29-7	0.1 mg/m^3	0.3 mg/m^3	——	X
Endrin	72-20-8	0.1 mg/m^3	0.3 mg/m^3	——	X
Epichlorhydrin (1-Chloro-2, 3-epoxypropane)	106-89-8	2 ppm	4 ppm	——	X
EPN	2104-64-5	0.5 mg/m^3	1.5 mg/m^3	——	X
1, 2-Epoxypropane (Propylene oxide)	75-56-9	20 ppm	30 ppm	——	——
2, 3-Epoxy-1-propanol (Glycidol)	556-52-5	25 ppm	38 ppm	——	——
Ethane	——	Simple asphyxiant	——	——	——
Ethanethiol (Ethyl mercaptan)	75-08-1	0.5 ppm	1.5 ppm	——	——
Ethanol (Ethyl alcohol)	64-17-5	1,000 ppm	1,250 ppm	——	——
Ethanolamine (2-Aminoethanol)	141-43-5	3 ppm	6 ppm	——	——
Ethion	563-12-2	0.4 mg/m^3	1.2 mg/m^3	——	X
2-Ethoxyethanol (Glycol monoethyl ether)	110-80-5	5 ppm	10 ppm	——	X
2-Ethoxyethyl acetate (Cellosolve acetate)	111-15-9	5 ppm	10 ppm	——	X
Ethyl acetate	141-78-6	400 ppm	500 ppm	——	——
Ethyl acrylate	140-88-5	5 ppm	25 ppm	——	X
Ethyl alcohol (ethanol)	64-17-5	1,000 ppm	1,250 ppm	——	——
Ethylamine	75-04-07	10 ppm	20 ppm	——	——
Ethyl amyl ketone (5-Methyl-3-hepatone)	541-85-5	25 ppm	38 ppm	——	——
Ethyl benzene	100-41-4	100 ppm	125 ppm	——	——
Ethyl bromide	74-96-4	200 ppm	250 ppm	——	——
Ethyl butyl ketone (3-Heptanone)	106-35-4	50 ppm	75 ppm	——	——
Ethyl chloride	75-00-3	1,000 ppm	1,250 ppm	——	——
Ethylene	74-85-1	Simple asphyxiant	——	——	——
Ethylene chlorohydrin (2-Chloroethanol)	107-07-3	——	——	1 ppm	X
Ethylenediamine (1,2-Diaminoethane)	107-15-3	10 ppm	20 ppm	——	X
Ethylene dibromide	106-93-4	0.1 ppm	0.5 ppm	——	——
Ethylene dichloride (1,2-Dichloroethane)	107-06-2	1 ppm	2 ppm	——	——
Ethylene glycol	107-21-1	——	——	50 ppm	——
Ethylene glycol dinitrate	628-96-6	——	0.1 mg/m^3	——	X
Ethylene glycol monomethyl ether acetate (Methyl cellosolve acetate)	——	5 ppm	10 ppm	——	X
Ethyleneimine (see WAC 296-62-073)	151-56-4	——	——	——	X
Ethylene oxide (see chapter 296-855 WAC)	75-21-8	1 ppm	5 ppm	——	——
Ethyl ether (Diethyl ether)	60-29-7	400 ppm	500 ppm	——	——
Ethyl formate	109-94-4	100 ppm	125 ppm	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Ethylidine chloride (1, 1-Dichloroethane)	107-06-2	1 ppm	2 ppm	——	——
Ethylidene norbornene	16219-75-3	——	——	5.0 ppm	——
Ethyl mercaptan (Ethanethiol)	75-08-1	0.5 ppm	1.5 ppm	——	——
n-Ethylmorpholine	100-74-3	5 ppm	10 ppm	——	X
Ethyl sec-amyl ketone (5-methyl-3-heptanone)	541-85-5	25 ppm	38 ppm	——	——
Ethyl silicate	78-10-4	10 ppm	20 ppm	——	——
Fenamiphos	22224-92-6	0.1 mg/m^3	0.3 mg/m^3	——	X
Fensulfothion (Dasanit)	115-90-2	0.1 mg/m^3	0.3 mg/m^3	——	——
Fenthion	55-38-9	0.2 mg/m^3	0.6 mg/m^3	——	X
Ferbam	——	——	——	——	——
Total particulate	14484-64-1	10 mg/m^3	20 mg/m^3	——	——
Ferrovanadium dust	12604-58-9	1 mg/m^3	3 mg/m^3	——	——
Fluorides (as F)	Varies with compound	2.5 mg/m^3	5 mg/m^3	——	——
Fluorine	7782-41-4	0.1 ppm	0.3 ppm	——	——
Fluorotrichloromethane (see Trichlorofluoro methane)	75-69-4	——	——	1,000 ppm	——
Fonofos	944-22-9	0.1 mg/m^3	0.3 mg/m^3	——	X
Formaldehyde (see chapter 296-856 WAC)	50-00-0	0.75 ppm	2 ppm	——	——
Formamide	75-12-7	20 ppm	30 ppm	——	——
Formic acid	64-18-6	5 ppm	10 ppm	——	——
Furadon (carbofuran)	1563-66-2	0.1 mg/m^3	0.3 mg/m^3	——	——
Furfural	98-01-1	2 ppm	4 ppm	——	X
Furfuryl alcohol	98-00-0	10 ppm	15 ppm	——	X
Gasoline	8006-61-9	300 ppm	500 ppm	——	——
Germanium tetrahydride	7782-65-2	0.2 ppm	0.6 ppm	——	——
Glass, fibrous or dust	——	10 mg/m^3	20 mg/m^3	——	——
Glutaraldehyde	111-30-8	——	——	0.2 ppm	——
Glycerin mist	56-81-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Glycidol (2, 3-Epoxy-1-propanol)	556-52-5	25 ppm	38 ppm	——	——
Glycol monoethyl ether (2-Ethoxyethanol)	110-80-5	5 ppm	10 ppm	——	X
Grain dust (oat, wheat, barley)	——	10 mg/m^3	20 mg/m^3	——	——
Graphite, natural	7782-42-5	——	——	——	——
Respirable particulate	——	2.5 mg/m^3	5 mg/m^3	——	——
Graphite, synthetic	——	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Guthion (Azinphosmethyl)	86-50-0	0.2 mg/m^3	0.6 mg/m^3	——	X
Gypsum	13397-24-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Hafnium	7440-58-6	0.5 mg/m^3	1.5 mg/m^3	——	——
Helium	——	Simple asphyxiant	——	——	——
Heptachlor	76-44-8	0.5 mg/m^3	1.5 mg/m^3	——	X
Heptane (n-heptane)	142-82-5	400 ppm	500 ppm	——	——
2-Heptanone (Methyl n-amyl ketone)	110-43-0	50 ppm	75 ppm	——	——
3-Heptanone (Ethyl butyl ketone)	106-35-4	50 ppm	75 ppm	——	——
Hexachlorobutadiene	87-68-3	0.02 ppm	0.06 ppm	——	X
Hexachlorocyclopentadiene	77-47-4	0.01 ppm	0.03 ppm	——	——
Hexachloroethane	67-72-1	1 ppm	3 ppm	——	X
Hexachloronaphthalene	1335-87-1	0.2 mg/m^3	0.6 mg/m^3	——	X
Hexafluoroacetone	684-16-2	0.1 ppm	0.3 ppm	——	X
Hexane	——	——	——	——	——
n-hexane	110-54-3	50 ppm	75 ppm	——	——
other isomers	Varies with compound	500 ppm	1,000 ppm	——	——
2-Hexanone (Methyl-n-butyl ketone)	591-78-6	5 ppm	10 ppm	——	——
Hexone (Methyl isobutyl ketone)	108-10-1	50 ppm	75 ppm	——	——
sec-Hexyl acetate	108-84-9	50 ppm	75 ppm	——	——
Hexylene glycol	107-41-5	——	——	25 ppm	——
Hydrazine	302-01-2	0.1 ppm	0.3 ppm	——	X

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Hydrogen	——	Simple asphyxiant	——	——	——
Hydrogenated terphenyls	61788-32-7	0.5 ppm	1.5 ppm	——	——
Hydrogen bromide	10035-10-6	——	——	3.0 ppm	——
Hydrogen chloride	7647-01-0	——	——	5.0 ppm	——
Hydrogen cyanide	74-90-8	——	4.7 ppm	——	X
Hydrogen fluoride	7664-39-3	——	——	3 ppm	——
Hydrogen peroxide	7722-84-1	1 ppm	3 ppm	——	——
Hydrogen selenide (as Se)	7783-07-5	0.05 ppm	0.15 ppm	——	——
Hydrogen sulfide	7783-06-4	10 ppm	15 ppm	——	——
Hydroquinone (Dihydroxybenzene)	123-31-9	2 mg/m^3	4 mg/m^3	——	——
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	123-42-2	50 ppm	75 ppm	——	——
2-Hydroxypropyl acrylate	99-61-1	0.5 ppm	1.5 ppm	——	X
Indene	95-13-6	10 ppm	20 ppm	——	——
Indium and compounds (as In)	7440-74-6	0.1 mg/m^3	0.3 mg/m^3	——	——
Iodine	7553-56-2	——	——	0.1 ppm	——
Iodoform	75-47-8	0.6 ppm	1.8 ppm	——	——
Iron oxide dust and fume (as Fe)	1309-37-1	——	——	——	——
Total particulate	——	5 mg/m^3	10 mg/m^3	——	——
Iron pentacarbonyl (as Fe)	13463-40-6	0.1 ppm	0.2 ppm	——	——
Iron salts, soluble (as Fe)	Varies with compound	1 mg/m^3	3 mg/m^3	——	——
Isoamyl acetate	123-92-2	100 ppm	150 ppm	——	——
Isoamyl alcohol (primary and secondary)	123-51-3	100 ppm	125 ppm	——	——
Isobutyl acetate	110-19-0	150 ppm	188 ppm	——	——
Isobutyl alcohol	78-83-1	50 ppm	75 ppm	——	——
Isooctyl alcohol	26952-21-6	50 ppm	75 ppm	——	X
Isophorone	78-59-1	4 ppm	——	5 ppm	——
Isophorone diisocyanate	4098-71-9	0.005 ppm	0.02 ppm	——	X
Isopropoxyethanol	109-59-1	25 ppm	38 ppm	——	——
Isopropyl acetate	108-21-4	250 ppm	310 ppm	——	——
Isopropyl alcohol	67-63-0	400 ppm	500 ppm	——	——
Isopropylamine	75-31-0	5 ppm	10 ppm	——	——
N-Isopropylaniline	768-52-5	2 ppm	4 ppm	——	X
Isopropyl ether	108-20-3	250 ppm	313 ppm	——	——
Isopropyl glycidyl ether (IGE)	4016-14-2	50 ppm	75 ppm	——-	——
Kaolin	——	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Ketene	463-51-4	0.5 mg/m^3	1.5 mg/m^3	——	——
Lannate (Methomyl)	16752-77-5	2.5 mg/m^3	5 mg/m^3	——	——
Lead, inorganic (as Pb) (see WAC 296-62-07521 and 296-155-176)	7439-92-1	0.05 mg/m^3	——	——	——
Lead arsenate (as Pb) (see WAC 296-62-07521, 296-155-176, and chapter 296-848 WAC)	3687-31-8	0.05 mg/m^3	——	——	——
Lead chromate (as Pb) (see WAC 296-62-08003, 296-62-07521, and 296-155-176)	7758-97-6	0.05 mg/m^3	——	——	——
Limestone	1317-65-3	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Lindane	58-89-9	0.5 mg/m^3	1.5 mg/m^3	——	X
Lithium hydride	7580-67-8	0.025 mg/m^3	0.075 mg/m^3	——	——
L.P.G. (liquified petroleum gas)	68476-85-7	1,000 ppm	1,250 ppm	——	——
Magnesite	546-93-0	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Magnesium oxide fume	1309-48-4	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Malathion	121-75-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	X
Maleic anhydride	108-31-6	0.25 ppm	0.75 ppm	——	——
Manganese and compounds (as Mn)	7439-96-5	——	——	5 mg/m^3	——
Manganese cyclopentadienyl tricarbonyl (as Mn)	12079-65-1	0.1 mg/m^3	0.3 mg/m^3	——	X

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Manganese tetroxide and fume (as Mn)	7439-96-5	1 mg/m^3	3 mg/m^3	——	——
Marble	1317-65-3	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
MBOCA (4, 4'-Methylene bis (2-chloro-aniline)) (see WAC 296-62-073)	101-14-4	——	——	——	X
MDA (4, 4-Methylene dianiline) (see WAC 296-62-076 and 296-155-173)	101-77-9	0.01 ppm	0.1 ppm	——	X
MDI (Methylene bisphenyl isocyanate) (Diphenylmethane diisocyanate)	101-68-8	——	——	0.02 ppm	——
MEK (Methyl ethyl ketone) (2-Butanone)	78-93-3	200 ppm	300 ppm	——	——
MEKP (Methyl ethyl ketone peroxide)	1338-23-4	——	——	0.2 ppm	——
Mercury (as Hg)	7439-97-6	——	——	——	——
Aryl and inorganic	——	0.1 mg/m^3	0.3 mg/m^3	——	X
Organo-alkyl compounds	——	0.01 mg/m^3	0.03 mg/m^3	——	X
Vapor	——	0.05 mg/m^3	0.15 mg/m^3	——	X
Mesityl oxide	141-79-7	15 ppm	25 ppm	——	——
Methacrylic acid	79-41-4	20 ppm	30 ppm	——	X
Methane	——	Simple asphyxiant	——	——	——
Methanethiol (Methyl mercaptan)	74-93-1	0.5 ppm	1.5 ppm	——	——
Methanol (Methyl alcohol)	67-56-1	200 ppm	250 ppm	——	X
Methomyl (lannate)	16752-77-5	2.5 mg/m^3	5 mg/m^3	——	——
Methoxychlor	72-43-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
2-Methoxyethanol (Methyl cellosolve)	109-86-4	5 ppm	10 ppm	——	X
2-Methoxyethyl acetate (Methyl cellosolve acetate)	110-49-6	5 ppm	10 ppm	——	X
4-Methoxyphenol	150-76-5	5 mg/m^3	10 mg/m^3	——	——
Methyl acetate	79-20-9	200 ppm	250 ppm	——	——
Methyl acetylene (propyne)	74-99-7	1,000 ppm	1,250 ppm	——	——
Methyl acetylene-propadiene mixture (MAPP)	——	1,000 ppm	1,250 ppm	——	——
Methyl acrylate	96-33-3	10 ppm	20 ppm	——	X
Methylacrylonitrile	126-98-7	1 ppm	3 ppm	——	X
Methylal (Dimethoxy-methane)	109-87-5	1,000 ppm	1,250 ppm	——	——
Methyl alcohol (methanol)	67-56-1	200 ppm	250 ppm	——	X
Methylamine	74-89-5	10 ppm	20 ppm	——	——
Methyl amyl alcohol (Methyl isobutyl carbinol)	108-11-2	25 ppm	40 ppm	——	X
Methyl n-amyl ketone (2-Heptanone)	110-43-0	50 ppm	75 ppm	——	——
N-Methyl aniline (Monomethyl aniline)	100-61-8	0.5 ppm	1.5 ppm	——	X
Methyl bromide	74-83-9	5 ppm	10 ppm	——	X
Methyl-n-butyl ketone (2-Hexanone)	591-78-6	5 ppm	10 ppm	——	——
Methyl cellosolve (2-Methoxyethanol)	109-86-4	5 ppm	10 ppm	——	X
Methyl cellosolve acetate (2-Methoxyethyl acetate)	110-49-6	5 ppm	10 ppm	——	X
Methyl chloride	74-87-3	50 ppm	100 ppm	——	——
Methyl chloroform (1, 1, 1-trichlorethane)	71-55-6	350 ppm	450 ppm	——	——
Methyl chloromethyl ether (chloromethyl methyl ether) (see WAC 296-62-073)	107-30-2	——	——	——	——
Methyl 2-cyanoacrylate	137-05-3	2 ppm	4 ppm	——	——
Methylcyclohexane	108-87-2	400 ppm	500 ppm	——	——
Methylcyclohexanol	25639-42-3	50 ppm	75 ppm	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Methylcyclohexanone	583-60-8	50 ppm	75 ppm	——	X
Methylcyclopentadienyl manganese tricarbonyl (as Mn)	12108-13-3	0.2 mg/m^3	0.6 mg/m^3	——	X
Methyl demeton	8022-00-2	0.5 mg/m^3	1.5 mg/m^3	——	X
Methylene bisphenyl isocyanate (MDI) (Diphenylmethane diisocyanate)	101-68-8	——	——	0.02 ppm	——
4, 4'-Methylene bis (2-chloro-aniline) (MBOCA) (see WAC 296-62-073)	101-14-4	——	——	——	X
Methylene bis (4-cyclohexylisocyanate)	5124-30-1	——	——	0.01 ppm	——
Methylene chloride (Dichloromethane) (see chapter 296-859 WAC)	75-09-2	25 ppm	125 ppm	——	——
4, 4-Methylene dianiline (MDA) (see WAC 296-62-076 and 296-155-173)	101-77-9	0.01 ppm	0.1 ppm	——	X
Methyl ethyl ketone (MEK) (2-Butanone)	78-93-3	200 ppm	300 ppm	——	——
Methyl ethyl ketone peroxide (MEKP)	1338-23-4	——	——	0.2 ppm	——
Methyl formate	107-31-3	100 ppm	150 ppm	——	——
5-Methyl-3-heptanone (Ethyl amyl ketone)	541-85-5	25 ppm	38 ppm	——	——
Methyl hydrazine (Monomethyl hydrazine)	60-34-4	——	——	0.2 ppm	X
Methyl iodide	74-88-4	2 ppm	4 ppm	——	X
Methyl isoamyl ketone	110-12-3	50 ppm	75 ppm	——	——
Methyl isobutyl carbinol (Methyl amyl alcohol)	108-11-2	25 ppm	40 ppm	——	X
Methyl isobutyl ketone (Hexone)	108-10-1	50 ppm	75 ppm	——	——
Methyl isocyanate	624-83-9	0.02 ppm	0.06 ppm	——	X
Methyl isopropyl ketone	563-80-4	200 ppm	250 ppm	——	——
Methyl mercaptan (Methanethiol)	74-93-1	0.5 ppm	1.5 ppm	——	——
Methyl methacrylate	80-62-6	100 ppm	150 ppm	——	——
Methyl parathion	298-00-0	0.2 mg/m^3	0.6 mg/m^3	——	X
Methyl propyl ketone (2-Pentanone)	107-87-9	200 ppm	250 ppm	——	——
Methyl silicate	684-84-5	1 ppm	3 ppm	——	——
alpha-Methyl styrene	98-83-9	50 ppm	100 ppm	——	——
Mevinphos (Phosdrin)	7786-34-7	0.01 ppm	0.03 ppm	——	X
Metribuzin	21087-64-9	5 mg/m^3	10 mg/m^3	——	——
Mica (Silicates) Respirable fraction	12001-26-2	3 mg/m^3	6 mg/m^3	——	——
Molybdenum (as Mo)	7439-98-7	——	——	——	——
Soluble compounds	——	5 mg/m^3	10 mg/m^3	——	——
Insoluble compounds	——	10 mg/m^3	20 mg/m^3	——	——
Monochlorobenzene (Chlorobenzene)	108-90-7	75 ppm	113 ppm	——	——
Monocrotophos (Azodrin)	6923-22-4	0.25 mg/m^3	0.75 mg/m^3	——	——
Monomethyl aniline (N-Methyl aniline)	100-61-8	0.5 ppm	1.5 ppm	——	X
Monomethyl hydrazine	——	——	——	0.2 ppm	——
Morpholine	110-91-8	20 ppm	30 ppm	——	X
Naled (Dibrom)	300-76-5	3 mg/m^3	6 mg/m^3	——	X
Naphtha	8030-30-6	100 ppm	150 ppm	——	X
Naphthalene	91-20-3	10 ppm	15 ppm	——	——
alpha-Naphthylamine (see WAC 296-62-073)	134-32-7	——	——	——	——
beta-Naphthylamine (see WAC 296-62-073)	91-59-8	——	——	——	——
Neon	7440-01-9	Simple asphyxiant	——	——	——
Nickel carbonyl (as Ni)	13463-39-3	0.001 ppm	0.003 ppm	——	——
Nickel (as Ni)	7440-02-0	——	——	——	——
Metal and insoluble compounds	——	1 mg/m^3	3 mg/m^3	——	——
Soluble compounds	——	0.1 mg/m^3	0.3 mg/m^3	——	——
Nicotine	54-11-5	0.5 mg/m^3	1.5 mg/m^3	——	X
Nitrapyrin (2-Chloro-6 trichloromethyl pyridine)	1929-82-4	——	——	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Nitric acid	7697-37-2	2 ppm	4 ppm	——	——
Nitric oxide	10102-43-9	25 ppm	38 ppm	——	——
p-Nitroaniline	100-01-6	3 mg/m^3	6 mg/m^3	——	X
Nitrobenzene	98-95-3	1 ppm	3 ppm	——	X
4-Nitrobiphenyl (see WAC 296-62-073)	92-93-3	——	——	——	——
p-Nitrochlorobenzene	100-00-5	0.5 mg/m^3	1.5 mg/m^3	——	X
4-Nitrodiphenyl (see WAC 296-62-073)	——	——	——	——	——
Nitroethane	79-24-3	100 ppm	150 ppm	——	——
Nitrogen	7727-37-9	Simple asphyxiant	——	——	——
Nitrogen dioxide	10102-44-0	——	1 ppm	——	——
Nitrogen oxide (Nitrous oxide)	10024-97-2	50 ppm	75 ppm	——	——
Nitrogen trifluoride	7783-54-2	10 ppm	20 ppm	——	——
Nitroglycerin	55-63-0	——	0.1 mg/m^3	——	X
Nitromethane	75-52-5	100 ppm	150 ppm	——	——
1-Nitropropane	108-03-2	25 ppm	38 ppm	——	——
2-Nitropropane	79-46-9	10 ppm	20 ppm	——	——
N-Nitrosodimethylamine (see WAC 296-62-073)	62-75-9	——	——	——	——
Nitrotoluene	——	——	——	——	——
o-isomer	88-72-2	2 ppm	4 ppm	——	X
m-isomer	98-08-2	2 ppm	4 ppm	——	X
p-isomer	99-99-0	2 ppm	4 ppm	——	X
Nitrotrichloromethane (Chloropicrin)	76-06-2	0.1 ppm	0.3 ppm	——	——
Nitrous oxide (Nitrogen oxide)	10024-97-2	50 ppm	75 ppm	——	——
Nonane	111-84-2	200 ppm	250 ppm	——	——
Nuisance dusts (see Particulates not otherwise regulated)	——	——	——	——	——
Octachloronaphthalene	2234-13-1	0.1 mg/m^3	0.3 mg/m^3	——	X
Octane	111-65-9	300 ppm	375 ppm	——	——
Oil mist mineral (particulate)	8012-95-1	5 mg/m^3	10 mg/m^3	——	——
Osmium tetroxide (as Os)	20816-12-0	0.0002 ppm	0.0006 ppm	——	——
Oxalic acid	144-62-7	1 mg/m^3	2 mg/m^3	——	——
Oxygen See requirements in other chapters such as: Chapter 296-809 WAC, Confined spaces; chapter 296-843 WAC, Hazardous waste operations; chapter 296-824 WAC, Emergency response; WAC 296-62-100, Oxygen deficient atmospheres	——	——	——	——	——
Oxygen difluoride	7783-41-7	——	——	0.05 ppm	——
Ozone	10028-15-6	0.1 ppm	0.3 ppm	——	——
Paper fiber (Cellulose)	9004-34-6	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Paraffin wax fume	8002-74-2	2 mg/m^3	4 mg/m^3	——	——
Paraquat	——	——	——	——	——
Respirable fraction	4685-14-7 1910-42-5 2074-50-2	0.1 mg/m^3	0.3 mg/m^3	——	X
Parathion	56-38-2	0.1 mg/m^3	0.3 mg/m^3	——	X
Particulate polycyclic aromatic hydrocarbons (see coal tar pitch volatiles)				——	——
Particulates not otherwise regulated	——	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Pentaborane	19624-22-7	0.005 ppm	0.015 ppm	——	——
Pentachloronaphthalene	1321-64-8	0.5 mg/m^3	1.5 mg/m^3	——	X
Pentachlorophenol	87-86-5	0.5 mg/m^3	1.5 mg/m^3	——	X
Pentaerythritol	115-77-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Pentane	109-66-0	600 ppm	750 ppm	——	——
2-Pentanone (methyl propyl ketone)	107-87-9	200 ppm	250 ppm	——	——
Perchloroethylene (tetrachloroethylene)	127-18-4	25 ppm	38 ppm	——	——
Perchloromethyl mercaptan	594-42-3	0.1 ppm	0.3 ppm	——	——
Perchloryl fluoride	7616-94-6	3 ppm	6 ppm	——	——
Perlite	——	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Petroleum distillates (Naptha, rubber solvent)	——	100 ppm	150 ppm	——	——
Phenacyl chloride (a-Chloroacetophenone)	532-21-4	0.05 ppm	0.15 ppm	——	——
Phenol	108-95-2	5 ppm	10 ppm	——	X
Phenothiazine	92-84-2	5 mg/m^3	10 mg/m^3	——	X
p-Phenylene diamine	106-50-3	0.1 mg/m^3	0.3 mg/m^3	——	X
Phenyl ether (vapor)	101-84-8	1 ppm	3 ppm	——	——
Phenyl ether-diphenyl mixture (vapor)	——	1 ppm	3 ppm	——	——
Phenylethylene (Styrene)	100-42-5	50 ppm	100 ppm	——	——
Phenyl glycidyl ether (PGE)	122-60-1	1 ppm	3 ppm	——	——
Phenylhydrazine	100-63-0	5 ppm	10 ppm	——	X
Phenyl mercaptan	108-98-5	0.5 ppm	1.5 ppm	——	——
Phenylphosphine	638-21-1	——	——	0.05 ppm	——
Phorate	298-02-2	0.05 mg/m^3	0.2 mg/m^3	——	X
Phosdrin (Mevinphos)	7786-34-7	0.01 ppm	0.03 ppm	——	X
Phosgene (carbonyl chloride)	75-44-5	0.1 ppm	0.3 ppm	——	——
Phosphine	7803-51-2	0.3 ppm	1 ppm	——	——
Phosphoric acid	7664-38-2	1 mg/m^3	3 mg/m^3	——	——
Phosphorus (yellow)	7723-14-0	0.1 mg/m^3	0.3 mg/m^3	——	——
Phosphorous oxychloride	10025-87-3	0.1 ppm	0.3 ppm	——	——
Phosphorus pentachloride	10026-13-8	0.1 ppm	0.3 ppm	——	——
Phosphorus pentasulfide	1314-80-3	1 mg/m^3	3 mg/m^3	——	——
Phosphorus trichloride	12-2-19	0.2 ppm	0.5 ppm	——	——
Phthalic anhydride	85-44-9	1 ppm	3 ppm	——	——
m-Phthalodinitrile	626-17-5	5 mg/m^3	10 mg/m^3	——	——
Picloram	1918-02-1	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Picric acid (2, 4, 6-Trinitrophenol)	88-89-1	0.1 mg/m^3	0.3 mg/m^3	——	X
Pindone (2-Pivalyl-1, 3-indandione, Pival)	83-26-1	0.1 mg/m^3	0.3 mg/m^3	——	——
Piperazine dihydrochloride	142-64-3	5 mg/m^3	10 mg/m^3	——	——
Pival (Pindone)	83-26-1	0.1 mg/m^3	0.3 mg/m^3	——	——
Plaster of Paris	26499-65-0	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Platinum (as Pt)	7440-06-4	——	——	——	——
Metal	——	1 mg/m^3	3 mg/m^3	——	——
Soluble salts	——	0.002 mg/m^3	0.006 mg/m^3	——	——
Polychlorobiphenyls (Chlorodiphenyls)	——	——	——	——	——
42% Chlorine (PCB)	53469-21-9	1 mg/m^3	3 mg/m^3	——	X
54% Chlorine (PCB)	11097-69-1	0.5 mg/m^3	1.5 mg/m^3	——	X
Portland cement	65997-15-1	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Potassium hydroxide	1310-58-3	——	——	2 mg/m^3	——
Propane	74-98-6	1,000 ppm	1,250 ppm	——	——
Propargyl alcohol	107-19-7	1 ppm	3 ppm	——	X
beta-Propiolactone (see WAC 296-62-073)	57-57-8	——	——	——	——
Propionic acid	79-09-4	10 ppm	20 ppm	——	——
Propoxur (Baygon)	114-26-1	0.5 mg/m^3	1.5 mg/m^3	——	——
n-Propyl acetate	109-60-4	200 ppm	250 ppm	——	——
n-Propyl alcohol	71-23-8	200 ppm	250 ppm	——	X
n-Propyl nitrate	627-13-4	25 ppm	40 ppm	——	——
Propylene	——	Simple asphyxiant	——	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Propylene dichloride (1, 2-Dichloropropane)	78-87-5	75 ppm	110 ppm	——	——
Propylene glycol dinitrate	6423-43-4	0.05 ppm	0.15 ppm	——	X
Propylene glycol monomethyl ether	107-98-2	100 ppm	150 ppm	——	——
Propylene imine	75-55-8	2 ppm	4 ppm	——	X
Propylene oxide (1,2-Epoxypropane)	75-56-9	20 ppm	30 ppm	——	——
Propyne (Methyl acetylene)	74-99-7	1,000 ppm	1,250 ppm	——	——
Pyrethrum	8003-34-7	5 mg/m^3	10 mg/m^3	——	——
Pyridine	110-86-1	5 ppm	10 ppm	——	——
Pyrocatachol (Catechol)	120-80-9	5 ppm	10 ppm	——	X
Quinone (p-Benzoquinone)	106-51-4	0.1 ppm	0.3 ppm	——	——
RDX (Cyclonite)	——	1.5 mg/m^3	3 mg/m^3	——	X
Resorcinol	108-46-3	10 ppm	20 ppm	——	——
Rhodium (as Rh)	7440-16-6	——	——	——	——
Insoluble compounds, metal fumes and dusts	——	0.1 mg/m^3	0.3 mg/m^3	——	——
Soluble compounds, salts	——	0.001 mg/m^3	0.003 mg/m^3	——	——
Ronnel	299-84-3	10 mg/m^3	20 mg/m^3	——	——
Rosin core solder, pyrolysis products (as formaldehyde)	8050-09-7	0.1 mg/m^3	0.3 mg/m^3	——	——
Rotenone	83-79-4	5 mg/m^3	10 mg/m^3	——	——
Rouge	——	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Rubber solvent (naphtha)	8030-30-6	100 ppm	150 ppm	——	——
Selenium compounds (as Se)	7782-49-2	0.2 mg/m^3	0.6 mg/m^3	——	——
Selenium hexafluoride (as Se)	7783-79-1	0.05 ppm	0.15 ppm	——	——
Sesone (Crag herbicide)	136-78-7	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Sevin (Carbaryl)	63-25-2	5 mg/m^3	10 mg/m^3	——	——
Silane (see Silicon tetrahydride)	7803-62-5	5 ppm	10 ppm	——	——
Silica, amorphous, precipitated and gel	112926-00-8	6 mg/m^3	12 mg/m^3	——	——
Silica, amorphous, diatomaceous earth, containing less than 1% crystalline silica	61790-53-2	——	——	——	——
Total particulate	——	6 mg/m^3	12 mg/m^3	——	——
Respirable fraction	——	3 mg/m^3	6 mg/m^3	——	——
Silica, crystalline cristobalite	——	——	——	——	——
Respirable fraction	14464-46-1	0.05 mg/m^3	0.15 mg/m3	——	——
Silica, crystalline quartz	——	——	——	——	——
Respirable fraction	14808-60-7	0.1 mg/m^3	0.3 mg/m^3	——	——
Silica, crystalline tripoli (as quartz)	——	——	——	——	——
Respirable fraction	1317-95-9	0.1 mg/m^3	0.3 mg/m^3	——	——
Silica, crystalline tridymite	——	——	——	——	——
Respirable fraction	15468-32-3	0.05 mg/m^3	0.15 mg/m^3	——	——
Silica, fused	——	——	——	——	——
Respirable fraction	60676-86-0	0.1 mg/m^3	0.3 mg/m^3	——	——
Silicates (less than 1% crystalline silica)	——	——	——	——	——
Mica	——	——	——	——	——
Respirable fraction	12001-26-2	3 mg/m^3	6 mg/m^3	——	——
Soapstone	——	——	——	——	——
Total particulate	——	6 mg/m^3	12 mg/m^3	——	——
Respirable fraction	——	3 mg/m^3	6 mg/m^3	——	——
Talc (containing asbestos) (as asbestos) (see WAC 296-62-07705 and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
Talc (containing no asbestos)	——	——	——	——	——
Respirable fraction	14807-96-6	2 mg/m^3	4 mg/m^3	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Tremolite (asbestiform) (as asbestos) (see WAC 296-62-07705 and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
Silicon	7440-21-3	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Silicon carbide	409-21-2	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Silicon tetrahydride (Silane)	7803-62-5	5 ppm	10 ppm	——	——
Silver, metal dust and soluble compounds (as Ag)	7440-22-4	0.01 mg/m^3	0.03 mg/m^3	——	——
Soapstone	——	——	——	——	——
Total particulate	——	6 mg/m^3	12 mg/m^3	——	——
Respirable fraction	——	3 mg/m^3	6 mg/m^3	——	——
Sodium azide (as HN3 or NaN3)	26628-22-8	——	——	0.1 ppm	X
Sodium bisulfite	7631-90-5	5 mg/m^3	10 mg/m^3	——	——
Sodium-2, 4-dichloro-phenoxyethyl sulfate (Crag herbicide)	136-78-7	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Sodium fluoroacetate	62-74-8	0.05 mg/m^3	0.15 mg/m^3	——	X
Sodium hydroxide	1310-73-2	——	——	2 mg/m^3	——
Sodium metabisulfite	7681-57-4	5 mg/m^3	10 mg/m^3	——	——
Starch	9005-25-8	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Stibine	7803-52-3	0.1 ppm	0.3 ppm	——	——
Stoddard solvent	8052-41-3	100 ppm	150 ppm	——	——
Strychnine	57-24-9	0.15 mg/m^3	0.45 mg/m^3	——	——
Styrene (Phenylethylene, Vinyl benzene)	100-42-5	50 ppm	100 ppm	——	——
Subtilisins	9014-01-1	——	0.00006 mg/m^3 (60 min.)	——	——
Sucrose	57-50-1	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Sulfotep (TEDP)	3689-24-5	0.2 mg/m^3	0.6 mg/m^3	——	X
Sulfur dioxide	7446-09-5	2 ppm	5 ppm	——	——
Sulfur hexafluoride	2551-62-4	1,000 ppm	1,250 ppm	——	——
Sulfuric acid	7664-93-9	1 mg/m^3	3 mg/m^3	——	——
Sulfur monochloride	10025-67-9	——	——	1 ppm	——
Sulfur pentafluoride	5714-22-1	——	——	0.01 ppm	——
Sulfur tetrafluoride	7783-60-0	——	——	0.1 ppm	——
Sulfuryl fluoride	2699-79-8	5 ppm	10 ppm	——	——
Sulprofos	35400-43-2	1 mg/m^3	3 mg/m^3	——	——
Systox (Demeton)	8065-48-3	0.01 ppm	0.03 ppm	——	X
2, 4, 5-T (2, 4, 5- tri-chlorophenoxyacetic acid)	93-76-5	10 mg/m^3	20 mg/m^3	——	——
Talc (containing asbestos) (as asbestos) (see WAC 296-62-07705 and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
Talc (containing no asbestos)	——	——	——	——	——
Respirable fraction	14807-96-6	2 mg/m^3	4 mg/m^3	——	——
Tantalum	——	——	——	——	——
Metal and oxide dusts	7440-25-7	5 mg/m^3	10 mg/m^3	——	——
TDI (Toluene-2, 4-diisocyanate)	584-84-9	0.005 ppm	0.02 ppm	——	——
TEDP (Sulfotep)	3689-24-5	0.2 mg/m^3	0.6 mg/m^3	——	X
Tellurium and compounds (as Te)	13494-80-9	0.1 mg/m^3	0.3 mg/m^3	——	——
Tellurium hexafluoride (as Te)	7783-80-4	0.02 ppm	0.06 ppm	——	——
Temephos (Abate)	3383-96-8	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
TEPP	107-49-3	0.004 ppm	0.012 ppm	——	X
Terphenyls	26140-60-3	——	——	0.5 ppm	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
1, 1, 1, 2-Tetrachloro-2, 2-difluoroethane	76-11-0	500 ppm	625 ppm	——	——
1, 1, 2, 2-Tetrachloro-1, 2-difluoroethane	76-12-0	500 ppm	625 ppm	——	——
1, 1, 2, 2-Tetrachloroethane	79-34-5	1 ppm	3 ppm	——	X
Tetrachloroethylene (Perchloroethylene)	127-18-4	25 ppm	38 ppm	——	——
Tetrachloromethane (Carbon tetrachloride)	56-23-5	2 ppm	4 ppm	——	X
Tetrachloronaphthalene	1335-88-2	2 mg/m^3	4 mg/m^3	——	X
Tetraethyl lead (as Pb)	78-00-2	0.075 mg/m^3	0.225 mg/m^3	——	X
Tetrahydrofuran	109-99-9	200 ppm	250 ppm	——	——
Tetramethyl lead (as Pb)	75-74-1	0.075 mg/m^3	0.225 mg/m^3	——	X
Tetramethyl succinonitrile	3333-52-6	0.5 ppm	1.5 ppm	——	X
Tetranitromethane	509-14-8	1 ppm	3 ppm	——	——
Tetrasodium pyrophosphate	7722-88-5	5 mg/m^3	10 mg/m^3	——	——
Tetryl (2, 4, 6-trinitrophenyl-methylnitramine)	479-45-8	1.5 mg/m^3	3 mg/m^3	——	X
Thallium (soluble compounds) (as Tl)	7440-28-0	0.1 mg/m^3	0.3 mg/m^3	——	X
4, 4-Thiobis (6-tert-butyl-m-cresol)	96-69-5	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Thiodan (Endosulfan)	115-29-7	0.1 mg/m^3	0.3 mg/m^3	——	X
Thioglycolic acid	68-11-1	1 ppm	3 ppm	——	X
Thionyl chloride	7719-09-7	——	——	1 ppm	——
Thiram (see WAC 296-62-07519)	137-26-8	5 mg/m^3	10 mg/m^3	——	——
Tin (as Sn)	——	——	——	——	——
Inorganic compounds	7440-31-5	2 mg/m^3	4 mg/m^3	——	——
Tin (as Sn)	——	——	——	——	——
Organic compounds	7440-31-5	0.1 mg/m^3	0.3 mg/m^3	——	X
Tin oxide (as Sn)	21651-19-4	2 mg/m^3	4 mg/m^3	——	——
Titanium dioxide	13463-67-7	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
TNT (2, 4, 6-Trinitrotoluene)	118-96-7	0.5 mg/m^3	1.5 mg/m^3	——	X
Toluene	108-88-3	100 ppm	150 ppm	——	——
Toluene-2, 4-diisocyanate (TDI)	584-84-9	0.005 ppm	0.02 ppm	——	——
m-Toluidine	108-44-1	2 ppm	4 ppm	——	X
o-Toluidine	95-53-4	2 ppm	4 ppm	——	X
p-Toluidine	106-49-0	2.0 ppm	4 ppm	——	X
Toxaphene (Chlorinated camphene)	8001-35-2	0.5 mg/m^3	1 mg/m^3	——	X
Tremolite (asbestiform) (as asbestos) (see WAC 296-62-07705 and chapter 296-65 WAC)	——	0.1 f/cc	1.0 f/cc (30 minutes)	——	——
Tributyl phosphate	126-73-8	0.2 ppm	0.6 ppm	——	——
Trichloroacetic acid	76-03-9	1 ppm	3 ppm	——	——
1, 2, 4-Trichlorobenzene	120-82-1	——	——	5 ppm	——
1, 1, 1-Trichloroethane (Methyl chloroform)	71-55-6	350 ppm	450 ppm	——	——
1, 1, 2-Trichloroethane	79-00-5	10 ppm	20 ppm	——	——
Trichloroethylene	79-01-6	50 ppm	200 ppm	——	——
Trichlorofluoromethane (Fluorotrichloromethane)	75-69-4	——	——	1,000 ppm	——
Trichloromethane (Chloroform)	67-66-3	2 ppm	4 ppm	——	——
Trichloronaphthalene	1321-65-9	5 mg/m^3	10 mg/m^3	——	X
1, 2, 3-Trichloropropane	96-18-4	10 ppm	20 ppm	——	X
1, 1, 2-Trichloro-1, 2, 2-trifluoroethane	76-13-1	1,000 ppm	1,250 ppm	——	——
Tricyclohexyltin hydroxide (Cyhexatin)	13121-70-5	5 mg/m^3	10 mg/m^3	——	——
Triethylamine	121-44-8	10 ppm	15 ppm	——	——
Trifluorobromomethane	75-63-8	1,000 ppm	1,250 ppm	——	——
Trimellitic anhydride	552-30-7	0.005 ppm	0.015 ppm	——	——
Trimethylamine	75-50-3	10 ppm	15 ppm	——	——
Trimethyl benzene	25551-13-7	25 ppm	38 ppm	——	——
Trimethyl phosphite	121-45-9	2 ppm	4 ppm	——	——

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
2, 4, 6-Trinitrophenol (Picric acid)	88-89-1	0.1 mg/m^3	0.3 mg/m^3	——	X
2, 4, 6-Trinitrophenyl-methylnitramine (Tetryl)	479-45-8	1.5 mg/m^3	3 mg/m^3	——-	X
2, 4, 6-Trinitrotoluene (TNT)	118-96-7	0.5 mg/m^3	1.5 mg/m^3	——	X
Triorthocresyl phosphate	78-30-8	0.1 mg/m^3	0.3 mg/m^3	——	X
Triphenyl amine	603-34-9	5 mg/m^3	10 mg/m^3	——	——
Triphenyl phosphate	115-86-6	3 mg/m^3	6 mg/m^3	——	——
Tungsten (as W)	7440-33-7	——	——	——	——
Soluble compounds	——	1 mg/m^3	3 mg/m^3	——	——
Insoluble compounds	——	5 mg/m^3	10 mg/m^3	——	——
Turpentine	8006-64-2	100 ppm	150 ppm	——	——
Uranium (as U)	7440-61-1	——	——	——	——
Soluble compounds	——	0.05 mg/m^3	0.15 mg/m^3	——	——
Insoluble compounds	——	0.2 mg/m^3	0.6 mg/m^3	——	——
n-Valeraldehyde	110-62-3	50 ppm	75 ppm	——	——
Vanadium (as V2O5)	——	——	——	——	——
Respirable fraction	1314-62-1	0.05 mg/m^3	0.15 mg/m^3	——	——
Vegetable oil mist	——	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Vinyl acetate	108-05-1	10 ppm	20 ppm	——	——
Vinyl benzene (Styrene)	100-42-5	50 ppm	100 ppm	——	——
Vinyl bromide	593-60-2	5 ppm	10 ppm	——	——
Vinyl chloride (Chloroethylene) (see WAC 296-62-07329)	75-01-4	1 ppm	5 ppm	——	——
Vinyl cyanide (Acrylonitrile) (see WAC 296-62-07336)	107-13-1	2 ppm	10 ppm	——	——
Vinyl cyclohexene dioxide	106-87-6	10 ppm	20 ppm	——	X
Vinyl toluene	25013-15-4	50 ppm	75 ppm	——	——
Vinylidene chloride (1, 1-Dichloroethylene)	75-35-4	1 ppm	3 ppm	——	——
VM & P Naphtha	8032-32-4	300 ppm	400 ppm	——	——
Warfarin	81-81-2	0.1 mg/m^3	0.3 mg/m^3	——	——
Welding fumes (total particulate)	——	5 mg/m^3	10 mg/m^3	——	——
Wood dust	——	——	——	——	——
Nonallergenic; (All woods except allergenics)	——	5 mg/m^3	10 mg/m^3	——	——
Allergenics (e.g. cedar, mahogany and teak)	——	2.5 mg/m^3	5 mg/m^3	——	——
Xylenes (ortho, meta, and para isomers) (Dimethylbenzene)	1330-20-7	100 ppm	150 ppm	——	——
m-Xylene alpha, alpha-diamine	1477-55-0	——	——	0.1 mg/m^3	X
Xylidine (Dimethylaminobenzene)	1300-73-8	2 ppm	4 ppm	——	X
Yttrium	7440-65-5	1 mg/m^3	3 mg/m^3	——	——
Zinc chloride fume	7646-85-7	1 mg/m^3	2 mg/m^3	——	——
Zinc chromate (as Cr) (see WAC 296-62-08003)	Varies with compound	0.005 mg/m^3	——	0.1 mg/m^3	——
Zinc oxide	1314-13-2	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m	——	——
Zinc oxide fume	1314-13-2	5 mg/g^3	10 mg/m^3	——	——
Zinc stearate	557-05-1	——	——	——	——
Total particulate	——	10 mg/m^3	20 mg/m^3	——	——
Respirable fraction	——	5 mg/m^3	10 mg/m^3	——	——
Zirconium compounds (as Zr)	7440-67-2	5 mg/m^3	10 mg/m^3	——	——

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-841-20025, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-20025, filed 8/31/04, effective 11/1/04.]

WAC 296-841-300 Definitions.

Breathing zone

The space around and in front of an employee's nose and mouth, forming a hemisphere with a six to nine inch radius.

Ceiling limit

See Permissible exposure limits (PELs).

Dust

Solid particles suspended in air. Dusts are generated by handling, drilling, crushing, grinding, rapid impact, detonation, or decrepitation of organic or inorganic materials such as rock, ore, metal, coal, wood, grain, etc.

Exposed or exposure

The contact an employee has with a toxic substance, harmful physical agent or oxygen deficient condition, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry, such as inhalation, ingestion, skin contact, or skin absorption.

Fume

Solid particles suspended in air, generated by condensation from the gaseous state, generally after volatilization from molten metals, etc.

Gas

A normally formless fluid which can be changed to the liquid or solid state by the effect of increased pressure or decreased temperature or both.

General exhaust ventilation

The general movement of air out of an area or permit-required confined space by mechanical or natural means.

Immediately dangerous to life or health (IDLH)

An atmospheric condition that would:

• Cause an immediate threat to life

or

• Cause permanent or delayed adverse health effects

or

• Interfere with an employee's ability to escape

Mist

Liquid droplets suspended in air, generated by condensation from the gaseous to the liquid state or by breaking up a liquid into a dispersed state, such as by splashing, foaming, spraying or atomizing.

Nuisance dust (or inert dust)

Dusts that, when inhaled, have little adverse effect on the lungs **and** do not produce significant organic disease or toxic effect when exposures are kept under reasonable control.

The biological reaction to these dusts in lung tissue has the following characteristics:

• The architecture of the air spaces remains intact

• Scar tissue (collagen) isn't formed to a significant extent

• The tissue reaction is potentially reversible

Oxygen deficient

An atmosphere with an oxygen content below 19.5% by volume.

Permissible exposure limits (PEL)

The amount of an airborne chemical, toxic substance, or other harmful agent that must not be exceeded during any part of the workday.

An airborne chemical or toxic substance can have 3 PEL values:

• TWA_8. This is an 8-hour, time-weighted average limit.

• Short-term exposure limit (STEL). This is typically a 15-minute, time-weighted average limit.

• Ceiling limit (C). This is an instantaneous limit.

Short-term exposure limit (STEL)

See Permissible exposure limits (PELs).

Temper

To condition air for a specific work environment by changing its temperature or moisture content.

Time weighted average (TWA_8)

See Permissible exposure limits (PELs).

Toxic substance

Any chemical substance or biological agent, such as bacteria, virus, and fungus, which is any of the following:

• Listed in the latest edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS)

• Shows positive evidence of an acute or chronic health hazard in testing conducted by, or known to, the employer.

• The subject of a material safety data sheet kept by or known to the employer showing the material may pose a hazard to human health.

Vapor

The gaseous form of a substance that is normally in the solid or liquid state.

Ventilation

Providing, circulating or exhausting air into or out of an area or space.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-841-300, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-300, filed 8/31/04, effective 11/1/04; 03-20-115, § 296-841-300, filed 10/1/03, effective 1/1/04.]