

Oregon OSHA Adopted Changes in Division 2, General Industry, and Division 3, Construction to Silica and Corrections to Air Contaminants

OR-OSHA Admin. Order 6-2008
Filed May 13, 2008, effective July 1, 2008

New text adopted/added is in **bold and underlined**.

Text repealed/removed is in [~~brackets with line through~~].

Text in **bold** only, show substances that the Oregon Permissible Exposure Limits (PELs) are different than the federal limits.

Division 2/Z, Table Z-1 Changes

*** Only the substances with proposed changes are shown here. ***

2-Acetylaminoflourine	53-96-3	(C)	(See 1910.10[14] <u>03</u>)	
4-Aminodiphenyl	92-67-1		(See 1910.10[14] <u>03</u>)	
Arsenic, Inorganic Compounds (as As)	7440-38-2		<u>0.01</u> (See 1910.1018)	
Benzidine	92-87-5		(See 1910.10[14] <u>03</u>)	
Cadmium dust and fume (as Cd)	7440-43-9	(See 1910.1027, 1926.1127 and Division 4) <u>0.005</u>		
Calcium arsenate	7778-44-1	—	14	
bis-Chloromethyl ether	542-88-1		(See 1910.100[8] <u>3</u>)	
Chloromethyl methyl ether	107-30-2		(See 1910.100[6] <u>3</u>)	

Cyanides (as CN)		—	5	X
Dibrom®	300-76-5	—	3	
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.001	(See 1910.1044)	
3,3-Dichlorobenzidine	91-94-1		(See 1910.100[7] 3)	X
Dicyclohexylmethane 4,4'-diisocyanate (hydrogenated MDI, see Oregon Table Z-2 (Diisocyanates))	5124-30-1			
Dihydroxybenzene, see Hydro[-]quinone				
4-Dimethylaminoazobenzene	60-11-7		(See 1910.10[15] 03)	
Dinitrobenzene (all isomers) (ortho) (meta) (para)	528-2[8] 9 -0 99-65-0 100-25-4		1	X
Diphenylmethane diisocyanate (MDI), see Oregon Table Z-2 (Diisocyanates)				
Ethyl alcohol (ethanol)	64-17-5	1,000	1,9[9] 00	
Ethylenimine	151-56-4		(See 1910.10[12] 03)	
Ethylene oxide	75-21-8	1	(See 1910.1047)	
Formaldehyde	50-00-0	0.75	(See 1910.1048)	
Hexamethylene diisocyanate (HDI), see Oregon Table Z-2 (Diisocyanates)	822-06-0			
Isophorone diisocyanate (IPDI), see Oregon Table Z-2 (Diisocyanates)	4098-71-9			
Lead, inorganic (as Pb)	7439-92-1	(See 1910.1025 & 1926.62)	0.05	
Lead arsenate	7784-40-9	(See 1910.1018)	0.01	
Methyl Chloromethyl ether			(See 1910.100[6] 3)	
Methylene bisphenyl isocyanate (MDI)	101-68-8	(See Oregon Table Z-2 (diisocyanates))		
Methylenedianiline (MDA)		(See 1910.1050 & 1926.60)	0.01	

Methylene Chloride	75-09-2	<u>25</u>	(See [Oregon Table Z-2] <u>1910.1052</u>)	
alpha-Naphthylamine	134-32-7		(See 1910.100[4] <u>3</u>)	
beta-Naphthylamine	91-59-8		(See 1910.100[9] <u>3</u>)	
Nicotine	54-11-5	0.075	0.5	X
p-Nitroaniline	100-01-6	1	6	<u>X</u>
N-Nitrosodimethylamine			(See 1910.10[16] <u>03</u>)	
Osmium tetroxide (as Os)	20816-12-0	[0.0002]	0.002	
Perchloroethylene (tetrachloro[-]ethylene)	127-18-4		(See Oregon Table Z-2)	
Phosdrin (Mevinphos®)	7786-34-7	[0.04]	0.1	X
Beta-Propiolactone	57-57-8		(See 1910.10[13] <u>03</u>)	
Propargyl alcohol	107-19-7	1	—	X
Silica			(See Oregon Table Z-3)	
Thiram	137-26-8		(See 437-002-0373) <u>0.15</u>	
Toluene diisocyanate (TDI), See Oregon Table Z-2 (Diisocyanates)	584-84-9			
Wood Dust (non-allergenic)		—	10	

Division 2, Table Z-2

*** Only the substances with proposed changes are shown here. ***

[Methylene chloride	(See 1910.1052)]				
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Division 2

OREGON TABLE Z-3 - MINERAL DUSTS		
Substance	mppcf (a)	mg/m³
Silica: Crystalline Quartz (respirable)	$\left[\frac{250^{(b)}}{\%SiO_2 + 5} \right]$	$\left[\frac{10 \text{ mg} / \text{m}^{3(e)}}{\%SiO_2 + 2} \right]$
<u>Cristobalite (respirable)</u> Quartz (total dust) [Cristobalite: Use 1/2 the value calculated from the count or mass formulae for quartz.] Tridymite: Use 1/2 the value calculated from the formulae for quartz. Amorphous, including natural diatomaceous earth 20	 $\frac{30 \text{ mg} / \text{m}^{3(e)}}{\%SiO_2 + 2}$ $\frac{80 \text{ mg} / \text{m}^{3(e)}}{\%SiO_2}$
Silicates (less than 1% crystalline silica): Mica Soapstone Talc (not containing asbestos)..... Talc (containing asbestos) Use asbestos limit. Tremolite, asbestiform (see OAR 437, Div. 2/Z, 1910.1001, Asbestos). Portland cement	 20 20 20 <u>20^(c)</u> 50	 $\frac{80 \text{ mg} / \text{m}^{3(e)}}{\%SiO_2}$
Graphite (Natural).....	[15]	<u>5mg/m³</u>
Coal Dust: Respirable fraction less than 5% SiO ₂)		$2.4 \text{ mg} / \text{m}^{3(f)}$
Coal Dust: Respirable fraction greater than 5% SiO ₂)		$\frac{10 \text{ mg} / \text{m}^{3(e)(f)}}{\%SiO_2 + 2}$
<u>Inert or Nuisance Dust: ^(d)</u> <u>Respirable fraction</u> <u>Total dust</u>	 [10] [50]	 $5 \text{ mg} / \text{m}^3$ $10 \text{ mg} / \text{m}^3$

NOTE: Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal limits.

NOTE: Conversion factors - mppcf x 35.3 = million particles per cubic meter = particles per c.c.

FOOTNOTES:

- (a) Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.
- (b) The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable.
- (c) Containing less than 1% quartz; if 1% quartz or more, use quartz limit.

(d) All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particulates Not Otherwise Regulated (PNOR) limit in Oregon Table Z-1.

~~(e) Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:~~

Aerodynamic Diameter (Unit Density Sphere)	Percent Passing Selector
2.....	90
2.5.....	75
3.5.....	50
5.0.....	25
10.....	0

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(e) Silica sampling methods must conform to OSHA or NIOSH sampling methods for respirable quartz silica.

(f) The measurements under this note refer to the use of an AEC (now NRC) instrument. If the respirable fraction of coal dust is determined with a MRE the figure corresponding to that of 2.4 mg/m³ in the table for coal dust is 4.5 mg/m³.

Division 3/Z, Table Z-1 Changes

*** Only the substances with proposed changes are shown here. ***

2-Acetylaminoflourine	53-96-3		(See 1910.10[44] 03)	
alpha Alumina	1344-28-1			
Total Dust		—	10	
Respirable Fraction		—	5	
Aluminum Metal Dust	7429-90-5			
Total Dust		—	10	
Respirable Fraction		—	5	
4-Aminodiphenyl	92-67-1		(See 1910.10[44] 03)	
Ammonium sulfamate	7773-06-0			
Total Dust		—	10	
Respirable Fraction		—	5	
Arsenic Inorganic Compounds (as As)	7440-38-2		(See 1910.1018) 0.01	
Benzidine	92-87-5		(See 1910.10[40] 03)	
Bismuth telluride (undoped)	1304-82-1			
Total Dust		—	10	
Respirable Fraction		—	5	
2-Butanone ([MEK] Methyl Ethyl Ketone)	78-93-3	200	590	
Cadmium dust and fume (as Cd)	7440-43-9		(See 1910.1027, 1926.1127 and Division 4) 0.005	
[Calcium arsenate	7778-44-1	—	4	
Calcium carbonate	1317-65-3			
Total Dust		—	10	
Respirable Fraction		—	5	
Calcium hydroxide	1305-62-0			
Total Dust		—	10	
Respirable Fraction		—	5	
Calcium silicate	1344-95-2			
Total Dust		—	10	
Respirable Fraction		—	5	

Calcium sulfate Total Dust Respirable Fraction	7778-18-9	— —	10 5	
Cellulose Total Dust Respirable Fraction	9006-34-6	— —	10 5	
2-Chloro-6-(trichloromethyl) pyridine Total Dust Respirable Fraction	1929-82-4	— —	10 5	
Clopidol Total Dust Respirable Fraction	2971-90-6	— —	10 5	
Crag® herbicide (Sesone) Total Dust Respirable Fraction	136-78-7	— —	10 5	
Dibrom®	300-76-5	—	3	
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.001	(See 1910.1044)	
Dicyclohexylmethane 4,4'-diisocyanate (hydrogenated MDI, see Oregon Table Z- 2 (Diisocyanates))	5124-30-1			
Dicyclopentadienyl iron Total Dust Respirable Fraction	102-54-5	— —	10 5	
Diphenylmethane diisocyanate (MDI), see Oregon Table Z-2 (Diisocyanates)				
Emery Total Dust Respirable Fraction	12415-34-8	— —	10 5	
Formaldehyde	50-00-0	0.75	(See 1910.1048)	
Glycerin (mist) Total Dust Respirable Fraction	56-81-5	— —	10 5	
Graphite (Synthetic) Total Dust Respirable Fraction	7782-42-5	— —	10 5	
Gypsum Total Dust Respirable Fraction	13397-24-5	— —	10 5	

Hexamethylene diisocyanate (HDI), see Oregon Table Z-2 (Diisocyanates)	822-06-01			
1,6 Hexamethylene diisocyanate Based Adduct, see Oregon Table Z-2 (Diisocyanates)				
Isophorone diisocyanate (IPDI), see Oregon Table Z-2 (Diisocyanates)	4098-71-9			
Kaolin Total Dust Respirable Fraction	1332-58-7	— —	10 5	
Lead arsenate	7784-40-9	(See 1910.1018)	<u>0.01</u>	
Limestone Total Dust Respirable Fraction	1317-65-3	— —	10 5	
Magnesite Total Dust Respirable Fraction	546-93-0	— —	10 5	
Marble Total Dust Respirable Fraction	1317-65-3	— —	10 5	
Methylene bisphenyl isocyanate (MDI)	101-68-8	(See Oregon Table Z-2 (diisocyanates))		
Methylenedianiline (MDA)		(See 1910.1050 & 1926.60)	<u>0.01</u>	
Methylene Chloride	75-09-2	<u>25</u>	(See [Oregon Table Z-2] <u>1910.1052</u>)	
Nicotine	54-11-5	0.075	0.5	X
Osmium tetroxide (as Os)	20816-12-0	[0.0002]	0.002	
Particulates not otherwise regulated (PNOR) ^(f) Total Dust Respirable Fraction		— —	10 5	
Pentaerythritol Total Dust Respirable Fraction	115-77-5	— —	10 5	

Perlite	93763-70-3			
Total Dust		—	10	
Respirable Fraction		—	5	
Phosdrin (Mevinphos®)	7786-34-7	[0.01]	0.1	X
Picloram	1918-02-1			
Total Dust		—	10	
Respirable Fraction		—	5	
Plaster of Paris	26499-65-0			
Total Dust		—	10	
Respirable Fraction		—	5	
Portland Cement	65997-15-1			
Total Dust		—	10	
Respirable Fraction		—	5	
Propargyl alcohol	107-19-7	1	—	X
Rouge				
Total Dust		—	10	
Respirable Fraction		—	5	
Silica			(See Oregon Table Z-3)	
Silicon	7440-21-3			
Total Dust		—	10	
Respirable Fraction		—	5	
Silicon carbide	409-21-2			
Total Dust		—	10	
Respirable Fraction		—	5	
Starch	9005-25-8			
Total Dust		—	10	
Respirable Fraction		—	5	
Sucrose	57-50-1			
Total Dust		—	10	
Respirable Fraction		—	5	
Temephos	3383-96-8			
Total Dust		—	10	
Respirable Fraction		—	5	
Thallium (soluble compounds) as T[+] <u>1</u>	7440-28-0	—	0.1	X
4,4'-Thiobis (6-tert, Butyl-m-cresol)	96-69-5			
Total Dust		—	10	
Respirable Fraction		—	5	

Thiram	137-26-8		(See 437-002-0373) 0.15	
Toluene diisocyanate (TDI), See Oregon Table Z-2 (Diisocyanates)	584-84-9			
Vegetable oil mist				
Total Dust		—	10	
Respirable Fraction		—	5	
Wood Dust (non-allergenic)		—	10	
Zinc oxide	1314-13-2			
Total Dust		—	10	
Respirable Fraction		—	5	
Zinc [state] stearate	557-05-1			
Total Dust		—	10	
Respirable Fraction		—	5	

Division 3/Z, Table Z-2

*** Only the substances with proposed changes are shown here. ***

Carbon disulfide (Z37.3-1968)	20 ppm	30 ppm	100 ppm	30 min.	<u>X</u>
Ethylene dibromide (Z37.31-1970)	20 ppm	30 ppm	50 ppm	5 min.	<u>X</u>
Mercury (Z37.8-1971)	0.05 mg/m ³	0.1 mg/m ³			<u>X</u>
Methylene chloride (Z37.3-1969)		(See 1910.1052)			
Organo (alkyl) mercury (Z37.30-1969)	0.001 mg/m ³	0.01 mg/m ³			<u>X</u>
Toluene (Z37.12-1967)	100 ppm	300 ppm	500 ppm	10 min.	

Division 3

OREGON TABLE Z-3 – MINERAL DUSTS		
Substance	mppcf ^(a)	mg/m³
Silica:	[$\frac{250^{(b)}}{\% SiO_2 + 5}$]	[$\frac{10mg / m^{3(e)}}{\% SiO_2 + 2}$]
Crystalline		
Quartz (respirable)		0.1
<u>Cristobalite (respirable)</u>		0.05
Quartz (total dust)		$\frac{30mg / m^{3(e)}}{\% SiO_2 + 2}$
[Cristobalite: Use 1/2 the value calculated from the count or mass formulae for quartz.		
Tridymite: Use 1/2 the value calculated from the formulae for quartz.		
Amorphous, including natural diatomaceous earth	20	$\frac{80mg / m^3}{\% SiO_2}$
Silicates (less than 1% crystalline silica):		
Mica	20	
Soapstone	20	
Talc (not containing asbestos)	20 ^(c)	
Talc (containing asbestos) Use asbestos limit.	20	
Tremolite, asbestiform (see OAR 437, Div. 2/Z, 1910.1001, Asbestos).		
Portland cement	50	
Graphite (Natural)	[15]	5 mg/m³
Coal Dust:		
Respirable fraction less than 5% SiO ₂)		2.4 mg/m ³ ^(f)
Coal Dust:		
Respirable fraction greater than 5% SiO ₂)		$\frac{10mg / m^{3(e)(f)}}{\% SiO_2 + 2}$
Inert or Nuisance Dust: ^(d)		
Respirable fraction		5 mg/m ³
Total dust	[50]	10 mg/m ³

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(f) The measurements under this note refer to the use of an AEC (now NRC) instrument. If the respirable fraction of coal dust is determined with a MRE the figure corresponding to that of 2.4 mg/m³ in the table for coal dust is 4.5 mg/m³.