

DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES

DIRECTOR'S OFFICE

OCCUPATIONAL HEALTH STANDARDS-AIR CONTAMINANTS FOR CONSTRUCTION

(By authority conferred on the director of the department of consumer and industry services by sections 14 and 24 of 1974 PA 154 and Executive Reorganization Orders Nos. 1996-1 and 1996-2, MCL 408.1014, 408.1024, 330.3101, and 445.2001)

R 325.60151 Construction air contaminants.

Rule 1. (1) An employer shall ensure that employee exposures to inhalation, ingestion, skin absorption, or contact with any material or substance at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the American Conference of Governmental Industrial Hygienists, as listed in R 325.60154 to R 325.60161, are avoided.

(2) To achieve compliance with subrule (1) of this rule, an employer shall ensure that administrative or engineering controls are implemented whenever feasible. If administrative or engineering controls are not feasible to achieve full compliance, then protective equipment or other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed in this rule. Any equipment and technical measures used for this purpose shall first be approved for each particular use by a competent industrial hygienist or other technically qualified person. Respirators shall be used in a manner that is in compliance with R 325.60051 et seq., Part 451. respiratory protection.

(3) R 325.51401 et seq., Part 302. vinyl chloride, of the MIOSHA Occupational Health Standards for General Industry applies to the exposure of every employee to vinyl chloride in every employment and place of employment covered by these rules in place of any different standard on exposure to vinyl chloride that would otherwise be applicable by virtue of subrule (1) of this rule.

(4) These rules replace O.H. rule 6201.

(5) The "Threshold Limit Values (TLV) of the American Conference of Governmental Industrial Hygienists (A.C.G.I.H.) for 1970" appear in R 325.60153 to R 325.60161. The Threshold Limit Values identified in these administrative rules as Maximum Allowable Concentrations (MAC) are specified in the rules that follow.

History: 2002 AACS.

R 325.60152 Definitions pertaining to contaminants.

Rule 2. As used in these rules:

(a) "Maximum allowable concentration" or "MAC" means the threshold limit value or the time-weighted average 8-hour airborne concentration of a contaminant to which a person may be safely exposed.

(b) "Mg/m³" means milligrams of particulate per cubic meter of air.

(c) "Mppcf" means millions of particulates per cubic foot of air based on impinger samples counted by light field microscopic techniques.

(d) "Non-respirable atmosphere" means an atmosphere which contains insufficient oxygen, or an elevated level of contaminants which may render a person incapable of self-rescue.

(e) "Ppm" means parts of vapor or gas per million parts of air by volume at 25 degrees Celsius and 760 millimeters of mercury pressure.

(f) "Source" means a process or equipment that releases a contaminant into the air in concentrations exceeding the MAC.

History: 2002 AACS.

R 325.60153 Contaminants; exposures; MAC.

Rule 3. (1) An employer shall not allow an employee to be exposed to a contaminant at concentrations in excess of the MAC as listed in R 325.60154 to R 325.60161.

(2) An employer shall not allow an employee to be exposed to a contaminant or combination of contaminants in concentrations that are hazardous or injurious to the person's health.

History: 2002 AACS.

R 325.60154 Maximum allowable concentrations.

Rule 4. (1) Maximum allowable concentrations of air contaminants based on a repeated 8-hour work day exposure are listed in tables 1 to 7 in R 325.60155 to R 325.60161.

(2) A substance in tables 1 to 6 that is preceded by the letter A, C, or S is an especially hazardous contaminant and all the following precautions shall be taken:

(a) If the substance is preceded by the letter "A", then an employer shall ensure that an employee or any part of an employee's anatomy is not exposed to, or allowed to come in contact with, the substance by means of any respiratory, oral, or skin route.

(b) If the substance is preceded by the letter "C", then its MAC means the highest concentration at which an employer may allow a person to be exposed at any time. This concentration is commonly referred to as a "ceiling."

(c) If the substance is preceded by the letter "S", then an employer shall ensure that precautions are taken to prevent skin absorption.

History: 2002 AACS.

R 325.60155 Maximum allowable concentrations for substances; A and B.

Rule 5. Table 1. Substances A and B

Rule 5. Table 1. Substances A and B

Substance	MAC	
	ppm	mg/m ³
Abate	---	15
Acetaldehyde	200	360
Acetic acid	10	25
Acetic anhydride	5	20
Acetone	1,000	2,400
Acetonitrile	40	70
Acetylene	Inert gas	
Acetylene dichloride, see 1,2-Dichloroethylene		
Acetylene tetrabromide	1	14
Acrolein	0.1	0.25
S Acrylamide	---	0.3
S Acrylonitrile (see R 325.51501 et seq.*)	---	
S Aldrin	---	0.25
S Allyl alcohol	2	5
S Allyl chloride	1	3
C Allyl glycidyl ether (AGE)	10	45
C Allyl propyl disulfide	2	12
Alundum, (Al ₂ O ₃)	Inert dust	
2-Aminoethanol, see Ethanolamine		
2-Aminopyridine	0.5	2
Ammonia	50	35
Ammonium sulfamate (amate)	---	15
n-Amyl acetate	100	525
sec-Amyl acetate	125	650
S Aniline	5	19
S Anisidine (o,p-isomers)	---	0.5
Antimony & compounds (as Sb)	---	0.5
ANTU (alpha naphthyl thiourea)	---	0.3
Argon	Inert gas	
Arsenic, inorganic compounds (see R 325.51601 et seq.*)	---	
Arsenic, organic compounds (as As)	---	0.5
Arsine	0.05	0.2
S Azinphos-methyl	---	0.2
Barium (soluble compounds)	---	0.5
S,C Benzene (benzol) (see R 325.77101 et seq.*)	---	
A,S Benzidine	---	---
F-Benzoquinone, see Quinone		
Benzoyl peroxide	---	5
Benzyl chloride	1	5
Beryllium	---	0.002
Biphenyl, see Diphenyl		
Bisphenol A, see Diglycidyl ether		
Boron oxide	---	15

	tert-Butyl acetate	200	950
	Butyl alcohol	100	300
	sec-Butyl alcohol	150	450
	tert-Butyl alcohol	100	300
S,C	Butylamine	5	15
S,C	tert-Butyl chromate (as CrO ₃)	---	0.1
	n-Butyl glycidyl ether (BGE)	50	270
	Butyl mercaptan	0.5	1.5
	p-tert-Butyltoluene	10	60
	A See R 325.60154(2).		
	C See R 325.60154(2).		
	S See R 325.60154(2).		
*	Caution--these rules contain extensive requirements for exposure to these substances.		

History: 2002 AACS.

R 325.60156 Maximum allowable concentrations for substances; C and D.
Rule 6. Table 2. Substances C and D

Rule 6. Table 2. Substances C and D

Substance	MAC	
	ppm	mg/m ³
C Cadmium (metal dust and soluble salts) (see R 325.51851 et seq.*)		
C Cadmium oxide fume (as Cd) (see R 325.51851 et seq.*)		
Calcium arsenate	---	1
Calcium carbonate		Inert dust
Calcium oxide	---	5
Camphor (synthetic)	2	---
Carbaryl (Sevin®)	---	5
Carbon black	---	3.5
Carbon dioxide	5,000	9,000
S Carbon disulfide	20	60
Carbon monoxide	50	55
S,C Carbon tetrachloride	10	65
Cellulose (paper fiber)		Inert dust
S Chlordane	---	0.5
S Chlorinated camphene	---	0.5
Chlorinated diphenyl oxide	---	0.5
Chlorine	1	3
Chlorine dioxide	0.1	0.3
C Chlorine trifluoride	0.1	0.4
C Chloroacetaldehyde	1	3
alpha-Chloroacetophenone (phenacylchloride)	0.05	0.3
Chlorobenzene (monochlorobenzene)	75	350
o-Chlorobenzylidene malononitrile (OCBM)	0.05	0.4
Chlorobromomethane	200	1,050
2-Chloro-1,3-butadiene, see Chloroprene		
S Chlorodiphenyl (42% Chlorine)	---	1
S Chlorodiphenyl (54% Chlorine)	---	0.5
1-Chloro-2,3-epoxypropane, see Epichlorohydrin		
2-Chloroethanol, see Ethylene chlorohydrin		
Chloroethylene, see Vinyl chloride		
C Chloroform (trichloromethane)	50	240
1-Chloro-1-nitropropane	20	100
Chloropicrin	0.1	0.7
S Chloroprene (2-chloro-1,3-butadiene)	25	90
Chromic acid and chromates (as CrO ₃)	---	0.1
Chromium, sol. chromic & chromous salts (as Cr)	---	0.5
Metal & insol. salts	---	1
Coal tar pitch volatiles (benzene soluble fraction: anthracene, BaP, phenanthrene, acridine, chrysene, pyrene)	---	0.2
Cobalt, metal fume & dust	---	0.1
Coke oven emissions (see R 325.50101 et seq.*)		
Copper fume	---	0.1
Dusts and mists	---	1

	Cyclohexene	300	1,015
	Cyclopentadiene	75	200
	2,4-D	---	10
S	DDT (Dichlorodiphenyltrichloroethane)	---	1
	DDVP, see Dichlorvos		
S	Decaborane	0.05	0.3
S	Demeton®	---	0.1
	Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	50	240
	1,2-Diainoethane, see Ethylenediamine		
	Diazomethane	0.2	0.4
	Diborane	0.1	0.1
S,C	2-Dibromoethane (ethylene dibromide)	25	190
	Dibutyl phosphate	1	5
	Dibutyl phthalate	---	5
C	Dichloroacetylene	0.1	0.4
C	o-Dichlorobenzene	50	300
	p-Dichlorobenzene	75	450
	Dichlorodifluoromethane	1,000	4,950
	1,3-Dichloro-5,5-dimethyl hydantoin	---	0.2
	1,1-Dichloroethane	100	400
	1,2-Dichloroethane	50	200
	1,2-Dichloroethylene	200	790
S,C	Dichloroethyl ether	15	90
	Dichloromethane, see Methylene chloride		
	Dichloromonofluoromethane	1,000	4,200
C	1,1-Dichloro-1-nitroethane	10	60
	1,2-Dichloropropane, see Propylene dichloride		
	Dichlorotetrafluoroethane	1,000	7,000
S	Dichlorvos (DDVP)	---	1
S	Dieldrin	---	0.25
	Diethyl	25	75
S	Diethylamino, ethanol	10	50
S,C	Diethylene triamine	10	42
	Diethyl ether, see Ethyl ether		
	Difluorodibromomethane	100	860
C	Diglycidyl ether (DGE)	0.5	2.8
	Dihydroxybenzene, see Hydroquinone		
	Diisobutyl ketone	50	290
S	Diisopropylamine	5	20
	Dimethoxymethane, see Methylal		
S	Dimethyl acetamide	10	35
	Dimethylamine	10	18
	Dimethylaminobenzene, see Xylidene		
S	Dimethylaniline (N-dimethylaniline)	5	25
	Dimethylbenzene, see Xylene		
	Dimethyl-1,2-dibromo-2,2-dichloroethyl phosphate	---	3

	Diphenyl amine	---	10
	Diphenylmethane diisocyanate, see Methylene bisphenyl isocyanate (MDI)		
S	Dipropylene glycol methyl ether	100	600
	Di-sec,octyl phthalate (di-2-ethylhexylphthalate)	---	5
	A	See R 325.60154(2).	
	C	See R 325.60154(2).	
	S	See R 325.60154(2).	
*	Caution--these rules contain extensive requirements for exposure to these substances.		

History: 2002 AACS.

R 325.60157 Maximum allowable concentrations for substances; E to H.
 Rule 7. Table 3. Substances E to H

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Substance	MAC	
	ppm	mg/m ³
Emery	Inert dust	
S Endosulfan (Thiodan®)	---	0.1
S Endrin	---	0.1
S Epichlorohydrin	5	19
S EPN	---	0.5
1,2-Epoxypropane, see Propylene oxide		
2,3-Epoxy-1-propanol, see Glycidol		
Ethane	Inert gas	
Ethanethiol, see Ethyl mercaptan		
Ethanolamine	3	6
S 2-Ethoxyethanol	200	740
S 2-Ethoxyethylacetate (cellosolve acetate)	100	540
Ethyl acetate	400	1,400
S Ethyl acrylate	25	100
Ethyl alcohol (ethanol)	1,000	1,900
Ethylamine	10	18
Ethyl sec-amyl ketone (5-methyl-3-heptanone)	25	130
Ethyl benzene	100	435
Ethyl bromide	200	890
Ethyl butyl ketone (3-heptanone)	50	230
Ethyl chloride	1,000	2,600
Ethyl ether	400	1,200
Ethyl formate	100	300
Ethyl mercaptan	0.5	1
Ethyl silicate	100	850
Ethylene	Inert gas	
S Ethylene chlorohydrin	5	16
Ethylenediamine	10	25
Ethylene dibromide, see 1,2-Dibromoethane		
Ethylene dichloride, see 1,2-Dichloroethane		
S,C Ethylene glycol dinitrate and/or Nitroglycerin	0.2	
Ethylene glycol monomethyl ether acetate, see Methyl cellosolve acetate		
S Ethylenimine	0.5	1
Ethylene oxide (see R 325.51151 et seq.*)		
Ethylidene chloride, see 1,1-Dichloroethane		
S N-Ethylmorpholine	20	94
Ferbam	---	15
Ferrovandium dust	---	1
Fibrous glass	Inert dust	
Fluoride (as F)	---	2.5
Fluorine	0.1	0.2
Fluorotrchloromethane	1,000	5,600

	Hafnium	---	0.5	
	Helium	---	Inert gas	
S	Heptachlor	---	0.5	
	Heptane (n-heptane)	500	2,000	
S	Hexachloroethane	1	10	
S	Hexachloronaphthalene	---	0.2	
	Hexane (n-hexane)	500	1,800	
	2-Hexanone	100	410	
	Hexone (methyl isobutyl ketone)	100	410	
	sec-Rexyl acetate	50	300	
S	Hydrazine	1	1.3	
	Hydrogen	---	Inert gas	
	Hydrogen bromide	3	10	
C	Hydrogen chloride	5	7	
S	Hydrogen cyanide	10	11	
	Hydrogen fluoride	3	2	
	Hydrogen peroxide	1	1.4	
	Hydrogen selenide	0.05	0.2	
	Hydrogen sulfide	10	15	
	Hydroquinone	---	2	
	A	See R 325.60154(2).		
	C	See R 325.60154(2).		
	S	See R 325.60154(2).		
*	Caution--these rules contain extensive requirements for exposure to these substances.			

History: 2002 AACS.

R 325.60158 Maximum allowable concentrations for substances; I to M.
Rule 8. Table 4. Substances I to M

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Substance	MAC	
	ppm	mg/m ³
Indene	10	45
Indium and compounds (as In)	---	0.1
C Iodine	0.1	1
Iron oxide fume	---	10
Iron salts, soluble (as Fe)	---	1
Isoamyl acetate	100	525
Isoamyl alcohol	100	360
Isobutyl acetate	150	700
Isobutyl alcohol	100	300
Isophorone	25	140
Isopropyl acetate	250	950
Isopropyl alcohol	400	980
Isopropylamine	5	12
Isopropyl ether	500	2,100
Isopropyl glycidyl ether (IGE)	50	240
Kaolin		Inert dust
Ketene	0.5	0.9
Lead and lead compounds (see R 325.51991 et seq.*)		Inert dust
Limestone		Inert dust
S Lindane	---	0.5
Lithium hydride	---	0.025
L.P.G. (liquified petroleum gas)	1,000	1,800
Magnesite		Inert dust
Magnesium oxide fume	15	
S Malathion	---	15
Maleic anhydride	0.25	1
C Manganese and compounds (as Mn)	---	5
Marble		Inert dust
S Mercury	---	0.1
S Mercury (organic compounds)	---	0.01
Mesityl oxide	25	100
Methane		Inert gas
Methanethiol, see Methyl mercaptan		
Methoxychlor	---	15
2-Methoxyethanol, see Methyl cellosolve		
Methyl acetate	200	610
Methyl acetylene (propyne)	1,000	1,650
Methyl acetylene-propadiene mixture (MAPP)	1,000	1,800
S Methyl acrylate	10	35
Methylal (dimethoxymethane)	1,000	3,100
Methyl alcohol (methanol)	200	260
Methylamine	10	12
Methyl amyl alcohol, see Methyl isobutyl carbinol		

	Methyl ethyl ketone (MEK), see 2-Butanone		
	Methyl formate	100	250
S	Methyl iodide	5	28
	Methyl isoanyl ketone	100	475
S	Methyl isobutyl carbinol	25	100
	Methyl isobutyl ketone, see Hexone		
S	Methyl isocyanate	0.02	0.05
	Methyl mercaptan	0.5	1
	Methyl methacrylate	100	410
	Methyl propyl ketone, see 2-Pentanone		
C	Methyl silicate	5	30
C	alpha-Methyl styrene	100	480
C	Methylene bisphenyl isocyanate (MDI)	0.02	0.2
	Methylene chloride (dichloromethane) (see R 325.51651 et seq.*)		
	Molybdenum (soluble compounds)	---	5
	(insoluble compounds)	---	15
S	Monomethyl aniline	2	9
S,C	Mouomethyl hydrazine	0.2	0.35
S	Morpholine	20	70
	A See R 325.60154(2).		
	C See R 325.60154(2).		
	S See R 325.60154(2).		
*	Caution--these rules contain extensive requirements for exposure to these substances.		

History: 2002 AACS.

R 325.60159 Maximum allowable concentrations for substances; N to P.
 Rule 9. Table 5. Substances N to P

Rule 9. Table 5. Substances N to P

Substance	MAC	
	ppm	mg/m ³
Naphtha (coal tar)	100	400
Naphtha (petroleum) (MAC will be based on aromatic hydrocarbons in mixture)		
Naphthalene	10	50
A beta-Naphthylamine	---	
Neon		Inert gas
Nickel carbonyl	0.001	0.007
Nickel, metal and soluble compounds (as Ni)	---	1
S Nicotine	---	0.5
Nitric acid	2	5
Nitric oxide	25	30
S p-Nitroaniline	1	6
S Nitrobenzene	1	5
S p-Nitrochlorobenzene	---	1
Nitroethane	100	310
Nitroethane		Inert gas
Nitrogen		
Nitrogen dioxide	5	9
Nitrogen trifluoride	10	29
S Nitroglycerin	0.2	2
Nitromethane	100	250
1-Nitropropane	25	90
2-Nitropropane	25	90
S,A N-Nitrosodimethylamine (dimethylnitrosamine)	---	
S Nitrotoluene	5	30
Nitrotrichloromethane, see Chloropicrin		
Nitrous oxide		Inert gas
S Octachloronaphthalene	---	0.1
Octane	400	1,900
Oil mist, particulate	---	5
Oil mist, vapor (MAC will be based on aromatic hydrocarbons in mixture)		
Osmium tetroxide	---	0.002
Oxalic acid	---	1
Oxygen difluoride	0.05	0.1
Ozone	0.1	0.2
S Paraquat	---	0.5
S Parathion	---	0.1
Pentaborane	0.005	0.01
S Pentachloronaphthalene	---	0.5
S Pentachlorophenol	---	0.5
Pentaerythritol		Inert particulate
Pentane	500	1,500
2-Pentanone	200	700

S	Phenylhydrazine	5	22
S	Phosdrin (Mevinphos®)	---	0.1
	Phosgene (carbonyl chloride)	0.1	0.4
	Phosphine	0.3	0.4
	Phosphoric acid	---	1
	Phosphorus (yellow)	---	0.1
	Phosphorus pentachloride	---	1
	Phosphorus pentasulfide	---	1
	Phosphorus trichloride	0.5	3
	Phthalic anhydride	2	12
S	Picric acid	---	0.1
	Pival® (2-pivalyl-1,3-indandione)	---	0.1
	Plaster of Paris	---	Inert dust
	Platinum, soluble salts (as Pt)	---	0.002
	Polytetrafluoroethylene decomposition products, see Teflon® decomposition products		
	Propane		Inert gas
S	Propargyl alcohol	1	---
A	beta-Propiolactone	---	---
	n-Propyl acetate	200	840
	Propyl alcohol	200	500
	n-Propyl nitrate	25	110
	Propylene bichloride	75	350
S	Propylene imine	2	5
	Propylene oxide	100	240
	Propyne, see Methyl acetylene		
	Pyrethrum	---	5
	Pyridine	5	15
	A	See R 325.60154(2).	
	C	See R 325.60154(2).	
	S	See R 325.60154(2).	

History: 2002 AACS.

R 325.60160 Maximum allowable concentrations for substances; Q to Z.
 Rule 10. Table 6. Substances Q to Z

Rule 10. Table 6. Substances Q to Z

Substance	MAC	
	ppm	mg/m ³
Quinone	0.1	0.4
S RDX	---	1.5
Rhodium, metal fume, dusts, and insoluble compounds (as Rh)	---	0.1
Rhodium, soluble compounds (as Rh)	---	0.001
Ronnel	---	10
Rotenone (commercial)	---	5
Rouge		Inert dust
Selenium compounds (as Se)	---	0.2
Selenium hexafluoride	0.05	0.4
Silicon carbide		Inert dust
Silver, metal and soluble compounds	---	0.01
S Sodium fluoroacetate (1080)	---	0.05
Sodium hydroxide	---	2
Starch		Inert dust
Stibine	0.1	0.5
Stoddard solvent	200	1,150
Strychnine	---	0.15
C Styrene monomer (phenylethylene)	100	420
Sucrose		Inert dust
Sulfur dioxide	5	13
Sulfur hexafluoride	1,000	6,000
Sulfuric acid	---	1
Sulfur monochloride	1	6
Sulfur pentafluoride	0.025	0.25
Sulfuryl fluoride	5	20
Systox, see Demeton®		
2,4,5T	---	10
Tantalum	---	5
S TEDE	---	0.2
Teflon® decomposition products (maintain minimal air concentration)		
Tellurium	---	0.1
Tellurium hexafluoride	0.02	0.2
S TEPP	---	0.05
C Terphenyls	1	9
1,1,1,2-Tetrachloro-2,2-difluoroethane	500	4,170
1,1,2,2-Tetrachloro-1,2-difluoroethane	500	4,170
S 1,1,2,2-Tetrachloroethane	5	35
Tetrachloroethylene, see Perchloroethylene		
Tetrachloromethane, see Carbon tetrachloride		
S Tetrachloronaphthalene	---	2
S Tetraethyl lead (as Pb)	---	0.075 ^a

	Toluene (toluol)	200	750
C	Toluene-2,4-diisocyanate	0.02	0.14
S	o-Toluidine	5	22
	Toxaphene, see Chlorinated camphene		
	Tributyl phosphate	---	5
	1,1,1-Trichloroethane, see Methyl chloroform		
S	1,1,2-Trichloroethane	10	45
	Trichloroethylene	100	535
	Trichloromethane, see Chloroform		
S	Trichloronaphthalene	---	5
	1,2,3-Trichloropropane	50	300
	1,1,2-Trichloro-1,2,2-trifluoroethane	1,000	7,600
	Triethylamine	25	100
	Trifluoromonomobromomethane	1,000	6,100
	Trimethyl benzene	25	120
	2,4,6-Trinitrophenol, see Picric acid		
	2,4,6-Trinitrophenylmethylnitramine, see Tetryl		
S	Trinitrotoluene	---	1.5
	Triorthocresyl phosphate	---	0.1
	Triphenyl phosphate	---	3
	Tungsten and compounds (as W)		
	Insoluble	---	5
	Soluble	---	1
	Turpentine	100	560
	Uranium (natural)		
	soluble & insoluble compounds (as U)	---	0.2
C	Vanadium (V ₂ O ₅ dust)	---	0.5
	(V ₂ O ₅ fume)	---	0.1
	Vinyl benzene, see Styrene		
C	Vinyl chloride (see R 325.51401 et seq.)*		
	Vinyl cyanide, see Acrylonitrile		
	Vinyl toluene	100	480
	Warfarin	---	0.1
	Xylene (xylol)	100	435
S	Xylidine	5	25
	Yttrium	---	1
	Zinc chloride fume	---	1
	Zinc oxide fume	---	5
	Zirconium compounds (as Zr)	---	5
	A See R 325.60154(2).		
	C See R 325.60154(2).		
	S See R 325.60154(2).		

*The 1970 ACGIH standard for Tetraethyl lead is 0.100 mg/m³.

* Caution--these rules contain extensive requirements for exposure to

History: 2002 AACS.

R 325.60161 Maximum allowable concentrations for mineral dusts.

Rule 11. Table 7. Mineral dusts

Substance	MAC (mppcf)
Silica	MAC = <u>250</u>
Crystalline *	% SiO ₂ +5
Quartz	MAC same as quartz
Cristobalite	20
Amorphous, including natural diatomaceous earth	
Silicates (less than 1% crystalline silica)	

Asbestos, all types (see asbestos in construction R 325.51301 et seq.)	
Mica	20
Portland cement	50
Soapstone	20
Talc (non-asbestiform)	20
Talc (fibrous) (see asbestos in construction R 325.51301 et seq.)	
Tremolite (see asbestos in construction R 325.51301 et seq.)	
Graphite (natural)	15
Inert or nuisance particles **	50 of total dust less than 1% SiO ₂ (or 15 mg/m ³ , whichever is the smaller)

*The percentage of crystalline silica, SiO₂, in the formula is the amount determined from airborne samples.

** The following are some examples of inert or nuisance particulates when toxic impurities are not present; e.g. quartz less than 1%.

Alundum (Al ₂ O ₃)	Gypsum	Rouge
Calcium carbonate	Limestone	Silicon carbide
Cellulose	Magnesite	Starch
Corundum (Al ₂ O ₃)	Marble	Sucrose
Emery	Pentaerythritol	Tin oxide
Glycerine mist	Plaster of Paris	Titanium dioxide

Graphite (synthetic)	Portland cement	Vegetable oil mists (except castor, cashew nut, or similar irritant oils)
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History: 2002 MR 1, Eff. Jan. 23, 2002.