PLAINTIFF'S EXHIBIT UC-1208

## SUBPART Z—TOXIC AND HAZARDOUS SUBSTANCES

INTERP

# 1910.1000—AIR CONTAMINANTS

An employee's exposure to any material listed in table Z–1, Z–2, or Z–3 of this section shall be limited in accordance with the requirements of the following paragraphs of this section.

### (a) Table Z–1:

**(1) Materials with names preceded by "C"—ceiling values.** An employee's exposure to any material in table Z–1, the name of which is preceded by a "C" (e.g., C Boron trifluoride), shall at no time exceed the ceiling value given for that material in the table.

**(2) Other materials—8-hour time weighted averages.** An employee's exposure to any material in table Z–1, the name of which is not preceded by "C", in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average given for that material in the table.

TABLE Z–1

| Substance | p.p.m.[a] | mg./M³ [b] |
|---|---|---|
| Acetaldehyde | 200 | 360 |
| Acetic acid | 10 | 25 |
| Acetic anhydride | 5 | 20 |
| Acetone | 1,000 | 2,400 |
| Acetonitrile | 40 | 70 |
| Acetylene dichloride, see 1, 2-Dichloroethylene | | |
| Acetylene tetrabromide | 1 | 14 |
| Acrolein | 0.1 | 0.25 |
| Acrylamide—Skin | | 0.3 |
| Aldrin—Skin | | 0.25 |
| Allyl alcohol—Skin | 2 | 5 |
| Allyl chloride | 1 | 3 |
| C Allyl glycidyl ether (AGE) | 10 | 45 |
| Allyl propyl disulfide | 2 | 12 |
| 2-Aminoethanol, see Ethanolamine | | |
| 2-Aminopyridine | 0.5 | 2 |
| Ammonia | 50 | 35 |
| Ammonium sulfamate (Ammate) | | 15 |
| n-Amyl acetate | 100 | 525 |
| sec-Amyl acetate | 125 | 650 |
| Aniline—Skin | 5 | 19 |
| Anisidine (o, p-isomers)—Skin | | 0.5 |
| Antimony and compounds (as Sb) | | 0.5 |
| ANTU (alpha naphthyl thiourea) | | 0.3 |

See footnotes at end of table.

TABLE Z–1—Continued

| Substance | p.p.m.[a] | mg./M³ [b] |
|---|---|---|
| Arsine | 0.05 | 0.2 |
| Azinphos-methyl—Skin | | 0.2 |
| Barium (soluble compounds) | | 0.5 |
| p-Benzoquinone, see Quinone | | |
| Benzoyl peroxide | | 5 |
| Benzyl chloride | 1 | 5 |
| Biphenyl, see Diphenyl | | |
| Boron oxide | | 15 |
| C Boron trifluoride | 1 | 3 |
| Bromine | 0.1 | 0.7 |
| Bromoform—Skin | 0.5 | 5 |
| Butadiene (1, 3-butadiene) | 1,000 | 2,200 |
| Butanethiol, see Butyl mercaptan | | |
| 2-Butanone | 200 | 590 |
| 2-Butoxy ethanol (Butyl Cellosolve)—Skin | 50 | 240 |
| Butyl acetate (n-butyl acetate) | 150 | 710 |
| sec-Butyl acetate | 200 | 950 |
| tert-Butyl acetate | 200 | 950 |
| Butyl alcohol | 100 | 300 |
| sec-Butyl alcohol | 150 | 450 |
| tert-Butyl alcohol | 100 | 300 |
| C Butylamine—Skin | 5 | 15 |
| C tert-Butyl chromate (as $CrO_3$)—Skin | | 0.1 |
| n-Butyl glycidyl ether (BGE) | 50 | 270 |
| Butyl mercaptan | 10 | 35 |
| p-tert-Butyltoluene | 10 | 60 |
| Calcium oxide | | 5 |
| Camphor | | 2 |
| Carbaryl (Sevin®) | | 5 |
| Carbon black | | 3.5 |
| Carbon dioxide | 5,000 | 9,000 |
| Carbon monoxide | 50 | 55 |
| Chlordane—Skin | | 0.5 |
| Chlorinated camphene—Skin | | 0.5 |
| Chlorinated diphenyl oxide | | 0.5 |
| C Chlorine | 1 | 3 |
| Chlorine dioxide | 0.1 | 0.3 |
| C Chlorine trifluoride | 0.1 | 0.4 |
| C Chloroacetaldehyde | 1 | 3 |
| α-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 | | |
| Chlorodiphenyl (42 percent Chlorine)—Skin | | 1 |
| Chlorodiphenyl (54 percent Chlorine)—Skin | | 0.5 |
| 1-Chloro-2,3-epoxypropane, see Epichlorhydrin | | |
| 2-Chloroethanol, see Ethylene chlorohydrin | | |



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TABLE Z–1—Continued

| Substance | p.p.m.[a] | mg./M³ [b] |
|---|---|---|
| Chloroethylene, see Vinyl chloride | | |
| C Chloroform (trichloromethane) | 50 | 240 |
| 1-Chloro-1-nitropropane | 20 | 100 |
| Chloropicrin | 0.1 | 0.7 |
| Chloroprene (2-chloro-1,3-butadiene)—Skin | 25 | 90 |
| Chromium, sol. chromic, chromous salts as Cr | | 0.5 |
| Metal and insol. salts | | 1 |
| Coal tar pitch volatiles (benzene soluble fraction) anthracene, BaP, phenanthrene, acridine, chrysene, pyrene | | 0.2 |
| Cobalt, metal fume and dust | | 0.1 |
| Copper fume | | 0.1 |
| Dusts and Mists | | 1 |
| Cotton dust (raw) | | 1 |
| Crag® herbicide | | 15 |
| Cresol (all isomers)—Skin | 5 | 22 |
| Crotonaldehyde | 2 | 6 |
| Cumene—Skin | 50 | 245 |
| Cyanide (as CN)—Skin | | 5 |
| Cyclohexane | 300 | 1,050 |
| Cyclohexanol | 50 | 200 |
| Cyclohexanone | 50 | 200 |
| Cyclohexene | 300 | 1,015 |
| Cyclopentadiene | 75 | 200 |
| 2, 4-D | | 10 |
| DDT—Skin | | 1 |
| DDVP, Skin | | 1 |
| Decaborane—Skin | 0.05 | 0.3 |
| Demeton®—Skin | | 0.1 |
| Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone) | 50 | 240 |
| 1,2-diaminoethane, see Ethylenediamine | | |
| Diazomethane | 0.2 | 0.4 |
| Diborane | 0.1 | 0.1 |
| Dibutyl Phosphate | 1 | 5 |
| Dibutylphthalate | | 5 |
| 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-Dichloroethylene | 200 | 790 |
| C Dichloroethyl ether—Skin | 15 | 90 |
| Dichloromethane, see Methylenechloride | | |
| Dichloromonofluoromethane | 1,000 | 4,200 |
| C 1,1-Dichloro-1-nitroethane | 10 | 60 |
| 1,2-Dichloropropane, see Propylenedichloride | | |
| Dichlorotetrafluoroethane | 1,000 | 7,000 |
| Dieldrin—Skin | | 0.25 |
| Diethylamine | 25 | 75 |
| Diethylamino ethanol—Skin | 10 | 50 |
| Diethylether, see Ethyl ether | | |
| Difluorodibromomethane | 100 | 860 |
| C Diglycidyl ether (DGE) | 0.5 | 2.8 |
| Dihydroxybenzene, see Hydroquinone | | |
| Diisobutyl ketone | 50 | 290 |
| Diisopropylamine—Skin | 5 | 20 |

See footnotes at end of table.

TABLE Z–1—Continued

| Substance | p.p.m.[a] | mg./M³ [b] |
|---|---|---|
| Dimethoxymethane, see Methylal | | |
| Dimethyl acetamide—Skin | 10 | 35 |
| Dimethylamine | 10 | 18 |
| Dimethylaminobenzene, see Xylidene | | |
| Dimethylaniline(N-dimethylaniline)—Skin | 5 | 25 |
| Dimethylbenzene, see Xylene | | |
| Dimethyl 1,2-dibromo-2,2-dichloroethyl phosphate, (Dibrom) | | 3 |
| Dimethylformamide—Skin | 10 | 30 |
| 2,6-Dimethylheptanone, see Diisobutyl ketone | | |
| 1,1-Dimethylhydrazine—Skin | 0.5 | 1 |
| Dimethylphthalate | | 5 |
| Dimethylsulfate—Skin | 1 | 5 |
| Dinitrobenzene (all isomers)—Skin | | 1 |
| Dinitro-o-cresol—Skin | | 0.2 |
| Dinitrotoluene—Skin | | 1.5 |
| Dioxane (Diethylene dioxide)—Skin | 100 | 360 |
| Diphenyl | 0.2 | 1 |
| Diphenylmethane diisocyanate (see Methylene bisphenyl isocyanate (MDI) | | |
| Dipropylene glycol methyl ether—Skin | 100 | 600 |
| Di-sec, octyl phthalate (Di-2-ethylhexylphthalate) | | 5 |
| Endrin—Skin | | 0.1 |
| Epichlorhydrin—Skin | 5 | 19 |
| EPN—Skin | | 0.5 |
| 1,2-Epoxypropane, see Propyleneoxide | | |
| 2,3-Epoxy-1-propanol, see Glycidol | | |
| Ethanethiol, see Ethylmercaptan | | |
| Ethanolamine | 3 | 6 |
| 2-Ethoxyethanol—Skin | 200 | 740 |
| 2-Ethoxyethylacetate (Cellosolve acetate)—Skin | 100 | 540 |
| Ethyl acetate | 400 | 1,400 |
| Ethyl acrylate—Skin | 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 |
| C Ethyl mercaptan | 10 | 25 |
| Ethyl silicate | 100 | 850 |
| Ethylene chlorohydrin—Skin | 5 | 16 |
| Ethylenediamine | 10 | 25 |
| C Ethylene glycol dinitrate and/or Nitroglycerin—Skin | [d] 0.2 | 1 |
| Ethylene glycol monomethyl ether acetate, see Methyl cellosolve acetate | | |
| Ethylene imine—Skin | 0.5 | 1 |

See footnotes at end of table.



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TABLE Z–1—Continued

| Substance | p.p.m.[a] | mg./M³ [b] |
|---|---|---|
| Ethylene oxide | 50 | 90 |
| Ethylidine chloride, see 1,1-Dichloroethane | | |
| N-Ethylmorpholine—Skin | 20 | 94 |
| Ferbam | | 15 |
| Ferrovanadium dust | | 1 |
| Fluoride (as F) | | 2.5 |
| Fluorine | 0.1 | 0.2 |
| Fluorotrichloromethane | 1,000 | 5,600 |
| Formic acid | 5 | 9 |
| Furfural—Skin | 5 | 20 |
| Furfuryl alcohol | 50 | 200 |
| Glycidol (2,3-Epoxy-1-propanol) | 50 | 150 |
| Glycol monoethyl ether, see 2-Ethoxyethanol | | |
| Guthion ®, see Azinphos-methyl | | |
| Hafnium | | 0.5 |
| Heptachlor—Skin | | 0.5 |
| Heptane (n-heptane) | 500 | 2,000 |
| Hexachloroethane—Skin | 1 | 10 |
| Hexachloronaphthalene—Skin | | 0.2 |
| Hexane (n-hexane) | 500 | 1,800 |
| 2-Hexanone | 100 | 410 |
| Hexone (Methyl isobutyl ketone) | 100 | 410 |
| sec-Hexyl acetate | 50 | 300 |
| Hydrazine—Skin | 1 | 1.3 |
| Hydrogen bromide | 3 | 10 |
| C Hydrogen chloride | 5 | 7 |
| Hydrogen cyanide—Skin | 10 | 11 |
| Hydrogen peroxide (90%) | 1 | 1.4 |
| Hydrogen selenide | 0.05 | 0.2 |
| Hydroquinone | | 2 |
| C Iodine | 0.1 | 1 |
| Iron oxide fume | | 10 |
| 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 |
| Isopropylether | 500 | 2,100 |
| Isopropyl glycidyl ether (IGE) | 50 | 240 |
| Ketene | 0.5 | 0.9 |
| Lindane—Skin | | 0.5 |
| Lithium hydride | | 0.025 |
| L.P.G. (liquified petroleum gas) | 1,000 | 1,800 |
| Magnesium oxide fume | | 15 |
| Malathion—Skin | | 15 |
| Maleic anhydride | 0.25 | 1 |
| C Manganese | | 5 |
| Mesityl oxide | 25 | 100 |
| 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 |
| Methyl acrylate—Skin | 10 | 35 |
| Methylal (dimethoxymethane) | 1,000 | 3,100 |
| Methyl alcohol (methanol) | 200 | 260 |

TABLE Z–1—Continued

| Substance | p.p.m.[a] | mg./M³ [b] |
|---|---|---|
| Methylamine | 10 | 12 |
| Methyl amyl alcohol, see Methyl isobutyl carbinol | | |
| Methyl (n-amyl) ketone (2-Heptanone) | 100 | 465 |
| C Methyl bromide—Skin | 20 | 80 |
| Methyl butyl ketone, see 2-Hexanone | | |
| Methyl cellosolve—Skin | 25 | 80 |
| Methyl cellosolve acetate—Skin | 25 | 120 |
| Methyl chloroform | 350 | 1,900 |
| Methylcyclohexane | 500 | 2,000 |
| Methylcyclohexanol | 100 | 470 |
| o-Methylcyclohexanone—Skin | 100 | 460 |
| Methyl ethyl ketone (MEK), see 2-Butanone | | |
| Methyl formate | 100 | 250 |
| Methyl iodide—Skin | 5 | 28 |
| Methyl isobutyl carbinol—Skin | 25 | 100 |
| Methyl isobutyl ketone, see Hexone | | |
| Methyl isocyanate—Skin | 0.02 | 0.05 |
| C Methyl mercaptan | 10 | 20 |
| Methyl methacrylate | 100 | 410 |
| Methyl propyl ketone, see 2-Pentanone | | |
| C α Methyl styrene | 100 | 480 |
| C Methylene bisphenyl isocyanate (MDI) | 0.02 | 0.2 |
| Molybdenum: | | |
| Soluble compounds | | 5 |
| Insoluble compounds | | 15 |
| Monomethyl aniline—Skin | 2 | 9 |
| C Monomethyl hydrazine—Skin | 0.2 | 0.35 |
| Morpholine—Skin | 20 | 70 |
| Naphtha (coaltar) | 100 | 400 |
| Naphthalene | 10 | 50 |
| Nickel carbonyl | 0.001 | 0.007 |
| Nickel, metal and soluble cmpds, as Ni | | 1 |
| Nicotine—Skin | | 0.5 |
| Nitric acid | 2 | 5 |
| Nitric oxide | 25 | 30 |
| p-Nitroaniline—Skin | 1 | 6 |
| Nitrobenzene—Skin | 1 | 5 |
| p-Nitrochlorobenzene—Skin | | 1 |
| Nitroethane | 100 | 310 |
| C Nitrogen dioxide | 5 | 9 |
| Nitrogen trifluoride | 10 | 29 |
| C Nitroglycerin—Skin | 0.2 | 2 |
| Nitromethane | 100 | 250 |
| 1-Nitropropane | 25 | 90 |
| 2-Nitropropane | 25 | 90 |
| Nitrotoluene—Skin | 5 | 30 |
| Nitrotrichloromethane, see Chloropicrin | | |
| Octachloronaphthalene—Skin | | 0.1 |
| Octane | 500 | 2,350 |
| Oil mist, mineral | | 5 |
| Organic Arsenic compounds (as As) | | 0.5 |
| Osmium tetroxide | | 0.002 |
| Oxalic acid | | 1 |
| Oxygen difluoride | 0.05 | 0.1 |
| Ozone | 0.1 | 0.2 |
| Paraquat—Skin | | 0.5 |
| Parathion—Skin | | 0.1 |
| Pentaborane | 0.005 | 0.01 |

See footnotes at end of table.



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TABLE Z–1—Continued

| Substance | p.p.m.[a] | mg./M³ [b] |
|---|---|---|
| Pentachloronaphthalene—Skin | | 0.5 |
| Pentachlorophenol—Skin | | 0.5 |
| Pentane | 1,000 | 2,950 |
| 2-Pentanone | 200 | 700 |
| Perchloromethyl mercaptan | 0.1 | 0.8 |
| Perchloryl fluoride | 3 | 13.5 |
| Petroleum distillates (naphtha) | 500 | 2,000 |
| Phenol—Skin | 5 | 19 |
| p-Phenylene diamine—Skin | | 0.1 |
| Phenyl ether (vapor) | 1 | 7 |
| Phenyl ether-biphenyl mixture (vapor) | 1 | 7 |
| Phenylethylene, see Styrene | | |
| Phenyl glycidyl ether (PGE) | 10 | 60 |
| Phenylhydrazine—Skin | 5 | 22 |
| Phosdrin (Mevinphos ®)—Skin | | 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 |
| Picric acid—Skin | | 0.1 |
| Pival ® (2-Pivalyl-1,3-indandione) | | 0.1 |
| Platinum (Soluble Salts) as Pt | | 0.002 |
| Propane | 1,000 | 1,800 |
| n-Propyl acetate | 200 | 840 |
| Propyl alcohol | 200 | 500 |
| n-Propyl nitrate | 25 | 110 |
| Propylene dichloride | 75 | 350 |
| Propylene imine—Skin | 2 | 5 |
| Propylene oxide | 100 | 240 |
| Propyne, see Methylacetylene | | |
| Pyrethrum | | 5 |
| Pyridine | 5 | 15 |
| Quinone | 0.1 | 0.4 |
| Rhodium, Metal fume and dusts, as Rh | | 0.1 |
| Soluble salts | | 0.001 |
| Ronnel | | 15 |
| Rotenone (commercial) | | 5 |
| Selenium compounds (as Se) | | 0.2 |
| Selenium hexafluoride | 0.05 | 0.4 |
| Silver, metal and soluble compounds | | 0.01 |
| Sodium fluoroacetate (1080)—Skin | | 0.05 |
| Sodium hydroxide | | 2 |
| Stibine | 0.1 | 0.5 |
| Stoddard solvent | 500 | 2,900 |
| Strychnine | | 0.15 |
| 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 |
| TEDP—Skin | | 0.2 |
| Tellurium | | 0.1 |

TABLE Z–1—Continued

| Substance | p.p.m.[a] | mg./M³ [b] |
|---|---|---|
| Tellurium hexafluoride | 0.02 | 0.2 |
| TEPP—Skin | | 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 |
| 1,1,2,2-Tetrachloroethane—Skin | 5 | 35 |
| Tetrachloromethane, see Carbon tetrachloride | | |
| Tetrachloronaphthalene—Skin | | 2 |
| Tetraethyl lead (as Pb)—Skin | | 0.075 |
| Tetrahydrofuran | 200 | 590 |
| Tetramethyl lead (as Pb)—Skin | | 0.075 |
| Tetramethyl succinonitrile—Skin | 0.5 | 3 |
| Tetranitromethane | 1 | 8 |
| Tetryl (2,4,6-trinitrophenylmethylnitramine)—Skin | | 1.5 |
| Thallium (soluble compounds)—Skin as Tl | | 0.1 |
| Thiram | | 5 |
| Tin (inorganic cmpds, except oxides | | 2 |
| Tin (organic cmpds) | | 0.1 |
| C Toluene-2,4-diisocyanate | 0.02 | 0.14 |
| o-Toluidine—Skin | 5 | 22 |
| Toxaphene, see Chlorinated camphene | | |
| Tributyl phosphate | | 5 |
| 1,1,1-Trichloroethane see Methyl chloroform | | |
| 1,1,2-Trichloroethane—Skin | 10 | 45 |
| Titaniumdioxide | | 15 |
| Trichloromethane, see Chloroform | | |
| Trichloronaphthalene—Skin | | 5 |
| 1,2,3-Trichloropropane | 50 | 300 |
| 1,1,2-Trichloro 1,2,2-trifluoroethane | 1,000 | 7,600 |
| Triethylamine | 25 | 100 |
| Trifluoromonobromomethane | 1,000 | 6,100 |
| 2,4,6-Trinitrophenol, see Picric acid | | |
| 2,4,6-Trinitrophenylmethylnitramine, see Tetryl | | |
| Trinitrotoluene—Skin | | 1.5 |
| Triorthocresyl phosphate | | 0.1 |
| Triphenyl phosphate | | 3 |
| Turpentine | 100 | 560 |
| Uranium (soluble compounds) | | 0.05 |
| Uranium (insoluble compounds) | | 0.25 |
| C Vanadium: | | |
| $V_2O_5$ dust | | 0.5 |
| $V_2O_5$ fume | | 0.1 |
| Vinyl benzene, see Styrene | | |
| Vinylcyanide, see Acrylonitrile | | |
| Vinyl toluene | 100 | 480 |
| Warfarin | | 0.1 |
| Xylene (xylol) | 100 | 435 |
| Xylidine—Skin | 5 | 25 |
| Yttrium | | 1 |
| Zinc chloride fume | | 1 |
| Zinc oxide fume | | 5 |
| Zirconium compounds (as Zr) | | 5 |

See footnotes at end of table.

Footnotes continued on page 700.



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STANDARDS AND INTERPRETATIONS

*"This standard applies in cotton yarn manufacturing until compliance with § 1910.1043 (c) and (e) is achieved.

• Parts of vapor or gas per million parts of contaminated air by volume at 25° C. and 760 mm. Hg pressure.

♭ Approximate milligrams of particulate per cubic meter of air.

(No footnote "c" is used to avoid confusion with ceiling value notations.)

⁴ An atmospheric concentration of not more than 0.02 p.p.m., or personal protection may be necessary to avoid headache.

## (b) Table Z–2:

**(1) 8-hour time weighted averages.** An employee's exposure to any material listed in table Z–2, in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average limit given for that material in the table.

**(2) Acceptable ceiling concentrations.** An employee's exposure to a material listed in table Z–2 shall not exceed at any time during an 8-hour shift the acceptable ceiling concentration limit given for the material in the table, except for a time period, and up to a concentration not exceeding the maximum duration and concentration allowed in the column under "acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift."

**(3) Example.** During an 8-hour work shift, an employee may be exposed to a concentration of Benzene above 25 p.p.m. (but never above 50 p.p.m.) only for a maximum period of 10 minutes. Such exposure must be compensated by exposures to concentrations less than 10 p.p.m. so that the cumulative exposure for the entire 8-hour work shift does not exceed a weighted average of 10 p.p.m.

TABLE Z–2

| Material | 8-hour time weighted average | Acceptable ceiling concentration | Acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift. | |
|---|---|---|---|---|
| | | | Concentration | Maximum |
| Benzene (Z37.40-1969)[1] | 10 p.p.m | 25 p.p.m | 50 p.p.m | 10 minutes. |
| Beryllium and beryllium compounds (Z37.29–1970). | 2 μg./M³ | 5 μg./M³ | 25 μg./M³ | 30 minutes. |
| Cadmium dust (Z37.5–1970) | 0.2 mg./M³ | 0.6 mg./M³ | | |
| Cadmium fume (Z37.5–1970) | 0.1 mg./M³ | 0.3 mg./M³ | | |
| Carbon disulfide (Z37.3–1968) | 20 p.p.m | 30 p.p.m | 100 p.p.m | 30 minutes |
| Carbon tetrachloride (Z37.17–1967) | 10 p.p.m | 25 p.p.m | 200 p.p.m | 5 minutes in any 4 hours. |
| Ethylene dibromide (Z37.31–1970) | 20 p.p.m | 30 p.p.m | 50 p.p.m | 5 minutes. |
| Ethylene dichloride (Z37.21–1969) | 50 p.p.m | 100 p.p.m | 200 p.p.m | 5 minutes in any 3 hours. |
| Fluoride as dust (Z37.28–1969) | 2.5 mg./M³ | | | |
| Formaldehyde (Z37.16–1967) | 3 p.p.m | 5 p.p.m | 10 p.p.m | 30 minutes. |
| Hydrogen fluoride (Z37.28–1969) | do | | | |
| Hydrogen sulfide (Z37.2–1966) | | 20 p.p.m | 50 p.p.m | 10 minutes once only if no other measurable exposure occurs. |
| Methyl chloride (Z37.18–1969) | 100 p.p.m | 200 p.p.m | 300 p.p.m | 5 minutes in any 3 hours. |
| Methylene Chloride (Z37.3–1969) | 500 p.p.m | 1,000 p.p.m | 2,000 p.p.m | 5 minutes in any 2 hours. |
| Organo (alkyl) mercury (Z37.30–1969) | 0.01 mg./M³ | 0.04 mg./M³ | | |
| Styrene (Z37.15–1969) | 100 p.p.m | 200 p.p.m | 600 p.p.m | 5 minutes in any 3 hours. |
| Tetrachloroethylene (Z37.22–1967) | 100 p.p.m | 200 p.p.m | 300 p.p.m | 5 minutes in any 3 hours. |
| Toluene (Z37.12–1967) | 200 p.p.m | 300 p.p.m | 500 p.p.m | 10 minutes. |
| Trichloroethylene (Z37.19–1967) | 100 p.p.m | 200 p.p.m | 300 p.p.m | 5 minutes in any 2 hours. |
| Mercury (Z37.8–1971) | | 1 mg./10M³ | | |
| Chromic acid and chromates (Z37.7–1971) | | do[3] | | |

[1] Occupational exposures to benzene are subject to the requirements of § 1910.1028 except as specifically exempted by § 1910.1028(a)(2). Exposures exempted by § 1910.1028(a)(2) are covered by this § 1910.1000



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(c) **Table Z–3:** An employee's exposure to any material listed in table Z–3, in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average limit given for that material in the table.

TABLE Z–3—MINERAL DUSTS

| Substance | Mppcf [e] | Mg/M³ |
|---|---|---|
| Silica: | | |
| Crystalline: | | |
| Quartz (respirable) | 250 [f] | 10mg/M³ [m] |
| | %SiO₂+5 | %SiO₂+2 |
| Quartz (total dust) | | 30mg/M³ |
| | | %SiO₂+2 |
| Cristobalite: Use ½ the value calculated from the count or mass formulae for quartz. | | |
| Tridymite: Use ½ the value calculated from the formulae for quartz. | | |
| Amorphous, including natural diatomaceous earth | 20 | 80mg/M³ |
| | | %SiO₂ |
| Silicates (less than 1% crystalline silica): | | |
| Mica | 20 | |
| Soapstone | 20 | |
| Talc (non-asbestos-form) | 20[n] | |
| Talc (fibrous). Use asbestos limit | | |
| Tremolite (see talc, fibrous) | | |
| Portland cement | 50 | |
| Graphite (natural) | 15 | |
| Coal dust (respirable fraction less than 5% $SiO_2$) | | 2.4mg/M³ |
| | | or |
| For more than 5% $SiO_2$ | | 10mg/M³ |
| | | %SiO₂+2 |
| Inert or Nuisance Dust: | | |
| Respirable fraction | 15 | 5mg/M³ |
| Total dust | 50 | 15mg/M³ |

NOTE: Conversion factors—
mppcf×35.3=million particles per cubic meter
=particles per c.c.

[e] Millions of particles per cubic foot of air, based on impinger samples counted by light-field technics.

[f] The percentage of crystalline silica in the formula is the amount determined from air-borne samples, except in those instances in which other methods have been shown to be applicable.

[m] 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:

[n] Containing < 1% quartz; if > 1% quartz, use quartz limit.

(d) Computation formulae:

(1)

(i) The cumulative exposure for an 8-hour work shift shall be computed as follows:

$$E = \frac{C_a T_a + C_b T_b + \ldots C_n T_n}{8}$$

where:

$E$ is the equivalent exposure for the working shift.

$C$ is the concentration during any period of time $T$ where the concentration remains constant.

$T$ is the duration in hours of the exposure at the concentration C.

The value of $E$ shall not exceed the 8-hour time weighted average limit in table Z–1, Z–2, or Z–3 for the material involved.

(ii) To illustrate the formula prescribed in subdivision (i) of this subparagraph, note that isoamyl acetate has an 8-hour time weighted average limit of 100 p.p.m. (table Z–1). Assume that an employee is subject to the following exposure:

Two hours exposure at 150 p.p.m.
Two hours exposure at 75 p.p.m.
Four hours exposure at 50 p.p.m.

Substituting this information in the formula, we have

$$\frac{2 \times 150 + 2 \times 75 + 4 \times 50}{8} = 81.25 \text{ p.p.m.}$$

Since 81.25 p.p.m. is less than 100 p.p.m., the 8-hour time weighted average limit, the exposure is acceptable.

(2)

(i) In case of a mixture of air contaminants an employer shall compute the equivalent exposure as follows:

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

where:

$E_m$ is the equivalent exposure for the mixture.

$C$ is the concentration of a particular contaminant.

$L$ is the exposure limit for that contaminant, from table Z–1, Z–2, or Z–3.



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The value of $E_m$ shall not exceed unity (1).

(ii) To illustrate the formula prescribed in subdivision (i) of this subparagraph, consider the following exposures:

| Material | Actual concentration of 8-hour exposure | 8-hour time weighted average exposure limit |
|---|---|---|
| Acetone (Table Z–1) | 500 p.p.m. | 1,000 p.p.m. |
| 2-Butanone (Table Z–1) | 45 p.p.m. | 200 p.p.m. |
| Toluene (Table Z–2) | 40 p.p.m. | 200 p.p.m. |

Substituting in the formula, we have:

$$E_m = \frac{500}{1,000} + \frac{45}{200} + \frac{40}{200}$$

$$E_m = 0.500 + 0.225 + 0.200$$

$$E_m = 0.925$$

Since $E_m$ is less than unity (1), the exposure combination is within acceptable limits.

(e) To achieve compliance with paragraph (a) through (d) of this section, administrative or engineering controls must first be determined and implemented whenever feasible. When such controls are not feasible to achieve full compliance, protective equipment or any other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed in this section. Any equipment and/or technical measures used for this purpose must be approved for each particular use by a competent industrial hygienist or other technically qualified person. Whenever respirators are used, their use shall comply with § 1910.134.

# 1910.1001—ASBESTOS

## (a) Definitions.

For the purpose of this section.

(1) "Asbestos" includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

(2) "Asbestos fibers" means asbestos fibers longer than 5 micrometers.

## (b) Permissible exposure to airborne concentrations of asbestos fibers.

(1) Standard effective July 7, 1972. The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed five fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(2) Standard effective July 1, 1976. The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(3) Ceiling concentration. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

## (c) Methods of compliance.

(1) Engineering methods.

(i) Engineering controls. Engineering controls, such as, but not limited to, isolation, enclosure, exhaust ventilation, and dust



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(ii) Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles.

(iii) Goggles that incorporate corrective lenses mounted behind the protective lenses.

(4) Every protector shall be distinctly marked to facilitate identification only of the manufacturer.

(5) When limitations or precautions are indicated by the manufacturer, they shall be transmitted to the user and care taken to see that such limitations and precautions are strictly observed.

(6) Design, construction, testing, and use of devices for eye and face protection shall be in accordance with American National Standard for Occupational and Educational Eye and Face Protection, Z87.1–1968.

# 1910.134—RESPIRATORY PROTECTION

**(a) Permissible practice.**

(1) In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to the following requirements.

(2) Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protective program which shall include the requirements outlined in paragraph (b) of this section.

(3) The employee shall use the provided respiratory protection in accordance with instructions and training received.

**(b) Requirements for a minimal acceptable program.**

(1) Written standard operating procedures governing the selection and use of respirators shall be established.

(2) Respirators shall be selected on the basis of hazards to which the worker is exposed.

(3) The user shall be instructed and trained in the proper use of respirators and their limitations.

(4) Where practicable, the respirators should be assigned to individual workers for their exclusive use.

(5) Respirators shall be regularly cleaned and disinfected. Those issued for the exclusive use of one worker should be cleaned after each day's use, or more often if necessary. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.

(6) Respirators shall be stored in a convenient, clean, and sanitary location.

(7) Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use.

(8) Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained.



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(9) There shall be regular inspection and evaluation to determine the continued effectiveness of the program.

(10) Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local physician shall determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed periodically (for instance, annually).

(11) Approved or accepted respirators shall be used when they are available. The respirator furnished shall provide adequate respiratory protection against the particular hazard for which it is designed in accordance with standards established by competent authorities. The U.S. Department of Interior, Bureau of Mines, and the U.S. Department of Agriculture are recognized as such authorities. Although respirators listed by the U.S. Department of Agriculture continue to be acceptable for protection against specified pesticides, the U.S. Department of the Interior, Bureau of Mines, is the agency now responsible for testing and approving pesticide respirators.

### (c) Selection of respirators.

Proper selection of respirators shall be made according to the guidance of American National Standard Practices for Respiratory Protection Z88.2–1969.

### (d) Air quality.

(1) Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall be of high purity. Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen. Breathing air shall meet at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G–7.1–1966. Compressed oxygen shall not be used in supplied-air respirators or in open circuit self-contained breathing apparatus that have previously used compressed air. Oxygen must never be used with air line respirators.

(2) Breathing air may be supplied to respirators from cylinders or air compressors.

(i) Cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR Part 178).

(ii) The compressor for supplying air shall be equipped with necessary safety and standby devices. A breathing air-type compressor shall be used. Compressors shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality. A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in event of compressor failure, and alarms to indicate compressor failure and overheating shall be installed in the system. If an oil-lubricated compressor is used, it shall have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, the air from the compressor shall be frequently tested for carbon monoxide to insure that it meets the specifications in subparagraph (1) of this paragraph.

(3) Air line couplings shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of air line respirators with nonrespirable gases or oxygen.

(4) Breathing gas containers shall be marked in accordance with American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1–1954; Federal Specification BB–A–1034a, June 21, 1968, Air, Compressed for Breathing Purposes; or Interim Federal Specification GG–B–00675b, April 27, 1965, Breathing Apparatus, Self-Contained.

### (e) Use of respirators.

(1) Standard procedures shall be developed for respirator use. These should include all



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information and guidance necessary for their proper selection, use, and care. Possible emergency and routine uses of respirators should be anticipated and planned for.

(2) The correct respirator shall be specified for each job. The respirator type is usually specified in the work procedures by a qualified individual supervising the respiratory protective program. The individual issuing them shall be adequately instructed to insure that the correct respirator is issued. Each respirator permanently assigned to an individual should be durably marked to indicate to whom it was assigned. This mark shall not affect the respirator performance in any way. The date of issuance should be recorded.

(3) Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

(i) In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional man shall be present. Communications (visual, voice, or signal line) shall be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency.

(ii) When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health, standby men must be present with suitable rescue equipment.

(iii) Persons using air line respirators in atmospheres immediately hazardous to life or health shall be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres or other and equivalent provisions for the rescue of persons from hazardous atmospheres shall be used. A standby man or men with suitable self-contained breathing apparatus shall be at the nearest fresh air base for emergency rescue.

(4) Respiratory protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspections shall be conducted by a qualified individual to assure that respirators are properly selected, used, cleaned, and maintained.

(5) For safe use of any respirator, it is essential that the user be properly instructed in its selection, use, and maintenance. Both supervisors and workers shall be so instructed by competent persons. Training shall provide the men an opportunity to handle the respirator, have it fitted properly, test its face-piece-to-face seal, wear it in normal air for a long familiarity period, and, finally, to wear it in a test atmosphere.

(i) Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses. Also, the absence of one or both dentures can seriously affect the fit of a facepiece. The worker's diligence in observing these factors shall be evaluated by periodic check. To assure proper protection, the facepiece fit shall be checked by the wearer each time he puts on the respirator. This may be done by following the manufacturer's facepiece fitting instructions.

(ii) Providing respiratory protection for individuals wearing corrective glasses is a serious problem. A proper seal cannot be established if the temple bars of eye glasses extend through the sealing edge of the full facepiece. As a temporary measure, glasses with short temple bars or without temple bars may be taped to the wearer's head. Wearing of contact lenses in contaminated atmospheres with a respirator shall not be allowed. Systems have been developed for mounting correc-



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tive lenses inside full facepieces. When a workman must wear corrective lenses as part of the facepiece, the facepiece and lenses shall be fitted by qualified individuals to provide good vision, comfort, and a gas-tight seal.

(iii) If corrective spectacles or goggles are required, they shall be worn so as not to affect the fit of the facepiece. Proper selection of equipment will minimize or avoid this problem.

**(f) Maintenance and care of respirators.**

(1) A program for maintenance and care of respirators shall be adjusted to the type of plant, working conditions, and hazards involved, and shall include the following basic services:

(i) Inspection for defects (including a leak check),

(ii) Cleaning and disinfecting,

(iii) Repair,

(iv) Storage

Equipment shall be properly maintained to retain its original effectiveness.

(2)

(i) All respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to assure that it is in satisfactory working condition.

(ii) Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be fully charged according to the manufacturer's instructions. It shall be determined that the regulator and warning devices function properly.

(iii) Respirator inspection shall include a check of the tightness of connections and the condition of the facepiece, headbands, valves, connecting tube, and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.

(iv) A record shall be kept of inspection dates and findings for respirators maintained for emergency use.

(3) Routinely used respirators shall be collected, cleaned, and disinfected as frequently as necessary to insure that proper protection is provided for the wearer. Each worker should be briefed on the cleaning procedure and be assured that he will always receive a clean and disinfected respirator. Such assurances are of greatest significance when respirators are not individually assigned to workers. Respirators maintained for emergency use shall be cleaned and disinfected after each use.

(4) Replacement or repairs shall be done only by experienced persons with parts designed for the respirator. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

(5)

(i) After inspection, cleaning, and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators placed at stations and work areas for emergency use should be quickly accessible at all times and should be stored in compartments built for the purpose. The compartments should be clearly marked. Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.



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(ii) Respirators should be packed or stored so that the facepiece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

(iii) Instructions for proper storage of emergency respirators, such as gas masks and self-contained breathing apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid.

(g) Identification of gas mask canisters.

(1) The primary means of identifying a gas mask canister shall be by means of properly worded labels. The secondary means of identifying a gas mask canister shall be by a color code.

(2) All who issue or use gas masks falling within the scope of this section shall see that all gas mask canisters purchased or used by them are properly labeled and colored in accordance with these requirements before they are placed in service and that the labels and colors are properly maintained at all times thereafter until the canisters have completely served their purpose.

(3) On each canister shall appear in bold letters the following:

(i)

Canister for .....
(Name for atmospheric contaminant)
or
Type N Gas Mask Canister

(ii) In addition, essentially the following wording shall appear beneath the appropriate phase on the canister label: "For respiratory protection in atmospheres containing not more than ..... percent by volume of ..... ."

(4) Canisters having a special high-efficiency filter for protection against radionuclides and other highly toxic particulates shall be labeled with a statement of the type and degree of protection afforded by the filter. The label shall be affixed to the neck end of, or to the gray stripe which is around and near the top of, the canister. The degree of protection shall be marked as the percent of penetration of the canister by a 0.3-micron-diameter dioctyl phthalate (DOP) smoke at a flow rate of 85 liters per minute.

(5) Each canister shall have a label warning that gas masks should be used only in atmospheres containing sufficient oxygen to support life (at least 16 percent by volume), since gas mask canisters are only designed to neutralize or remove contaminants from the air.

(6) Each gas mask canister shall be painted a distinctive color or combination of colors indicated in Table I–1. All colors used shall be such that they are clearly identifiable by the user and clearly distinguishable from one another. The color coating used shall offer a high degree of resistance to chipping, scaling, peeling, blistering, fading, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use. Appropriately colored pressure sensitive tape may be used for the stripes.



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TABLE I–1

| *Atmospheric contaminants to be protected against* | *Colors assigned** |
|---|---|
| Acid gases | White. |
| Hydrocyanic acid gas | White with ½-inch green stripe completely around the canister near the bottom. |
| Chlorine gas | White with ½-inch yellow stripe completely around the canister near the bottom. |
| Organic vapors | Black. |
| Ammonia gas | Green. |
| Acid gases and ammonia gas | Green with ½-inch white stripe completely around the canister near the bottom. |
| Carbon monoxide | Blue. |
| Acid gases and organic vapors | Yellow. |
| Hydrocyanic acid gas and chloropicrin vapor | Yellow with ½-inch blue stripe completely around the canister near the bottom. |
| Acid gases, organic vapors, and ammonia gases. | Brown. |
| Radioactive materials, excepting tritium and noble gases. | Purple (Magenta). |
| Particulates (dusts, fumes, mists, fogs, or smokes) in combination with any of the above gases or vapors. | Canister color for contaminant, as designated above, with ½-inch gray stripe completely around the canister near the top. |
| All of the above atmospheric contaminants | Red with ½-inch gray stripe completely around the canister near the top. |

*Gray shall not be assigned as the main color for a canister designed to remove acids or vapors.

NOTE: Orange shall be used as a complete body, or stripe color to represent gases not included in this table. The user will need to refer to the canister label to determine the degree of protection the canister will afford.

# 1910.135—OCCUPATIONAL HEAD PROTECTION

Helmets for the protection of heads of occupational workers from impact and penetration from falling and flying objects and from limited electric shock and burn shall meet the requirements and specifications established in American National Standard Safety Requirements for Industrial Head Protection, Z89.1–1969.

# 1910.136—OCCUPATIONAL FOOT PROTECTION

Safety-toe footwear for employees shall meet the requirements and specifications in American National Standard for Men's Safety-Toe Footwear, Z41.1–1967.



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