

OCCUPATIONAL HEALTH REGULATIONS

NO. 3

MAXIMUM PERMISSIBLE CONCENTRATIONS
OF ATMOSPHERIC CONTAMINANTS IN PLACES OF EMPLOYMENT

Effective July 1, 1958

CONSULT LOCAL HEALTH DEPARTMENTS AND PHYSICIANS

FOR

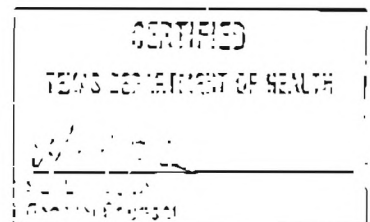
INFORMATION AND ADVICE

ON METHODS OF CONTROL OVER

HEALTH HAZARDS TO ALL WORKERS

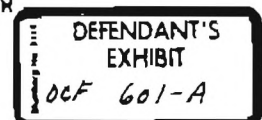
AND

INDUSTRIAL DISEASES AND INJURIES



TEXAS STATE DEPARTMENT OF HEALTH
DIVISION OF OCCUPATIONAL HEALTH
Austin, Texas

OH - 13 - 2
July 1958
(Supersedes OH - 13 - 1
September 1957)



V. MAXIMUM PERMISSIBLE CONCENTRATIONS DURING ONE WORKING DAY

A. <u>Gases and Vapors</u>	P.P.M.*	Approx. Mg.
		per Cu. M.
Acetaldehyde	200	360
Acetic acid	10	25
Acetic anhydride	5	20
Acetone	1,000	2,400
(-) Acetylene tetrabromide	1	14
Acrolein	0.5	1.2
Acrylonitrile	20	45
Allyl alcohol	5	12
Allyl chloride	5	15
(-) Allyl glycidyl ether (AGE)	10	45
Allyl propyl disulfide	2	12
Ammonia	100	70
Amyl acetate	200	1,050
Amyl alcohol (isoamyl alcohol)	100	360
Aniline	5	19
Arsine	0.05	0.2
Benzene (benzol)	25	80
Benzyl chloride	1	5
(-) Boron trifluoride	1	3
Bromine	1	7
Butadiene (1,3-butadiene)	1,000	2,200
Butanone (methyl ethyl ketone)	250	740
Butyl acetate (n-butyl acetate)	200	950
Butyl alcohol (n-butanol)	100	300
(-) Butyl glycidyl ether (BGE) (n-butyl glycidyl ether)	50	270
Butylamine	5	15
Butyl cellosolve (2-butoxyethanol)	50	240
(-) Butyl mercaptan	10	35
Carbon dioxide	5,000	9,000
Carbon disulfide	20	60
Carbon monoxide	100	110
Carbon tetrachloride	25	160
Cellosolve (2-ethoxyethanol)	200	740
Cellosolve acetate (2-ethoxyethyl acetate)	100	540
Chlorine	1	3
(a)(-) Chlorine dioxide	0.1	0
Chlorine trifluoride	0.1	0.4
(-) Chloroacetaldehyde	1	3
Chlorobenzene (monochlorobenzene)	75	350
(-) Chlorobromomethane (ClBrC ₂)	400	2,100
Chloroform (trichloromethane)	100	490
1-Chloro-1-nitropropane	20	100
Chloroethylene	1	7

*Parts of vapor or gas per million parts of air by volume.

Approximate milligrams per cubic meter of air.

(-) Toxicological information or injury reports on these items is of recent origin and most probably will require revision at an early date.

(a) New - Added 1956.

A. Gases and Vapors (Cont.)		P.P.M.*	Approx. Mg. per Cu. M./
Chloroprene (2-chloro-1,3-butadiene)		25	90
Cresol (all isomers)		5	22
Cyclohexane		400	1,400
Cyclohexanol		100	410
Cyclohexanone		100	400
Cyclohexene		400	1,350
Cyclopropane		400	690
Decaborane		0.05	0.3
Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)		50	240
Diborane		0.1	0.1
o-Dichlorobenzene		50	100
Dichlorodifluoroethane		1,000	4,950
1,1-Dichloroethane		100	400
1,2-Dichloroethane (ethylene dichloride)		100	400
1,2-Dichloroethylene		200	790
Dichloroethyl ether		15	90
Dichloroacetylfluoroethane		1,000	4,200
1,1-Dichloro-1-nitroethane		10	60
Dichlorotetrafluoroethane		1,000	7,000
Diethylamine		25	75
Difluorodibromoethane		100	860
(t) Diglycidyl ether (EGL)		10	55
Diisobutyl ketone		50	290
Dimethylaniline (p-dimethylaniline)		5	25
(t) Dimethyl formamide		20	60
(a)(t) 1-1 Diethylhydrazine		0.5	1
Dimethylsulfate		1	5
Dioxane (diethylene dioxide)		100	360
(t) Dipropyleneglycolmethylether		100	600
(a)(t) Epichlorohydrin		25	90
Ethyl acetate		400	1,400
Ethyl acrylate		25	100
Ethyl alcohol (ethanol)		1,000	1,900
(t) Ethyl mercaptan		250	600
Ethyl amine		25	45
Ethylbenzene		200	870
Ethyl bromide		200	890
Ethyl chloride		1,000	2,600
Ethyl ether		400	1,200
Ethyl formate		100	300
Ethyl silicate		100	350
Ethylene chlorohydrin		5	16

*Parts of vapor or gas per million parts of air by volume.

Approximate milligrams per cubic meter of air.

(t) Toxicological information or injury reports on these items is of recent origin and cost probably will require revision at an early date.

(a) New - Added 1952.

A. Gases and Vapors (Cont.)		P.P.M.*	Approx. Mg. per Cu. M.†
	Ethylenediamine	10	30
	Ethylene dibromide (1,2-dibromoethane)	25	190
	Ethylene imine	5	9
	Ethylene oxide	50	90
	Fluorine	0.1	0.2
	Fluorotrichloromethane	1,000	5,600
	Formaldehyde	5	6
	Furfural	5	20
(c)	Furfuryl alcohol	50	200
	Gasoline	500	2,000
(c)	Glycidol	50	150
	Heptane (n-heptane)	500	2,000
	Hexane (n-hexane)	500	1,800
	Hexanone (methyl butyl ketone)	100	410
	Hexone (methyl isobutyl ketone)	100	410
(a)(c)	sec-Butyl acetate	100	590
	Hydrazine	1	1.3
	Hydrogen bromide	5	17
	Hydrogen chloride	5	7
	Hydrogen cyanide	10	11
	Hydrogen fluoride	3	2
	Hydrogen peroxide, 90%	1	1.4
	Hydrogen selenide	0.05	0.2
	Hydrogen sulfide	20	30
	Iodine	0.1	1
	Isophorone	25	140
(c)	Isopropyl glycidyl ether (IGE)	50	240
	Isopropylamine	5	12
(n)	Mesityl oxide	25	200
	Methyl acetate	200	610
	Methyl acetylene	1,000	1,650
	Methyl acrylate	10	35
	Methyl alcohol (methanol)	200	260
	Methyl bromide	20	80
	Methyl cellosolve (2-methoxyethanol)	25	80
	Methyl cellosolve acetate (ethylene glycol monomethyl ether acetate)	25	120
	Methyl chloride	100	210
	Methylal (dimethoxymethane)	1,000	3,100
	Methyl chloroform (1,1,1-trichloroethane)	500	2,700
	Methylcyclohexane	500	2,000
	Methylcyclohexanol	100	470
	Methylcyclohexanone	100	460

*Parts of vapor or gas per million parts of air by volume.

†Approximate milligrams per cubic meter of air.

(c) Toxicological information or injury reports on these items is of recent origin and most probably will require revision at an early date.

(n) New value, 1958.

(a) New - Added 1958.

A. Gases and Vapors (Cont.)		P.P.M.*	Approx. Mg. per Cu. M./
	Methyl formate	100	250
	Methyl isobutyl carbinol (methyl amyl alcohol)	25	160
(t)	Methyl mercaptan	50	100
(t)	Methyl styrene	100	480
	Methylene chloride (dichloromethane)	500	1,750
(t)	Monomethyl aniline	2	9
	Naphtha (coal tar)	200	800
	Naphtha (petroleum)	500	2,000
	Nickel carbonyl	0.001	0.007
	Nitric acid	5	25
	P-Nitroaniline	1	6
	Nitrobenzene	1	5
	Nitroethane	100	310
	Nitrogen dioxide	5	9
	Nitroglycerin	0.5	5
	Nitromethane	100	250
	2-Nitropropane	50	160
	Nitrotoluene	5	30
	Octane	500	2,350
	Ozone	0.1	0.2
	Pentane	1,000	2,950
	Pentanone (methyl propyl ketone)	200	700
	Perchloroethylene (tetrachloroethylene)	200	1,350
(t)	Perchloroethyl mercaptan	0.1	0.8
	Phenol	5	19
(t)	Phenyl glycidyl ether (PGE)	50	310
	Phenylhydrazine	5	22
	Phosgene (carbonyl chloride)	1	4
	Phosphine	0.05	0.07
	Phosphorus trichloride	0.5	3
	Propyl acetate	200	840
	Propyl alcohol (isopropyl alcohol)	400	980
	Propyl ether (isopropyl ether)	500	2,100
(a)(t)	n-Propyl nitrate	25	110
	Propylene dichloride (1,2-dichloropropane)	75	350
	Propylene oxide	25	60
(t)	Propylene oxide	100	240
	Pyridine	10	30
	Quinone	0.1	0.4
	Stibine	0.1	0.5
	Stoddard solvent	500	2,900
	Styrene monomer (phenylethylene)	100	420
	Sulfur dioxide	5	13

*Parts of vapor or gas per million parts of air by volume

Approximate milligrams per cubic meter of air.

(t) Toxicological information or injury reports on these items is of recent origin and most probably will require revision at an early date.

(a) New - Added 1955.

A. Gases and Vapors (Cont.)		P.P.M.*	Approx. Mg. per Cu. M.*
	Sulfur hexafluoride	1,000	6,000
	Sulfur monochloride	1	6
	Sulfur pentafluoride	0.025	0.25
	p-Tertiary butyl toluene	10	60
(c)	Tertiary butyl alcohol	100	300
	1,1,2,2-Tetrachloroethane	5	35
	Tetrahydrofuran	200	590
	Tetrahydrofuran	1	8
	Toluene (toluol)	200	750
	o-Toluidine	5	22
(t)	Toluene-2,4-diisocyanate	0.1	0.7
	Trichloroethylene	200	1,050
(a)(t)	Trichloropropene	30	300
(t)	Triethyl amine	25	100
	Trifluoromono-bromomethane	1,000	6,100
	Turpentine	100	560
	Vinyl chloride (chloroethylene)	500	1,100
(c)	Vinyl toluene	100	480
	Xylene (xylol)	200	870
(c)	Xylylene	5	25
(#)(c)	Teflon decomposition products	0	0
(#)(c)	Pentaborane (B ₅ H ₉)	0	0

B. Toxic Dusts, Fumes, and Mists

	Mg. per Cu. M.*
Aldrin (1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-dimethanonaphthalene)	0.25
Ammonia (ammonium sulfate)	15
Antimony	0.5
ANTU (alpha naphthyl thiourea)	0.3
Arsenic	0.5
Barium (soluble compounds)	0.5
(t) Beryllium	0.001
Cadmium oxide fume	0.1
Calcium arsenate	0.1
Chlordane (1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane)	2
Chlorinated camphene, 60%	0.5
Chlorinated diphenyl oxide	0.5

*Parts of vapor or gas per million parts of air by volume.

*Approximate milligrams per cubic meter of air.

(t) Toxicological information or injury reports on these items is of recent origin and most probably will require revision at an early date.

(a) New - Added 1958.

(#) Until more data are forthcoming, it is important that atmospheric concentrations of these materials to which workers are exposed must be kept as near 0 as possible.

Milligrams of dust, fume, or mist per cubic meter of air.

B. Toxic Dusts, Fumes and Mists (Cont.)		Mg. per Cu. M. ^d
Chlorodiphenyl (42% chlorine)		1
Chlorodiphenyl (54% chlorine)		0.5
Chromic acid and chromates (as CrO ₃)		0.1
Crag herbicide (sodium 2-(2,4-dichlorophenoxy) ethanol hydrogen sulfate)		15
Cyanide (as CN)		5
2,4-D(2,4-dichlorophenoxyacetic acid)		10
DDT (2,2-bis(4-chlorophenyl)-1,1,1-trichloroethane)		1
Dieldrin (1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8, 8a-octahydro-1,4,5,8-dimethanonaphthalene)		0.25
Dinitrobenzene		1
Dinitrotoluene		1.5
Dinitro-o-cresol		0.2
EPN (O-ethyl O-p-nitrophenyl thionobenzene phosphonate)		0.5
Perban (ferric dimethyl dithiocarbamate)		15
Ferrovanadium dust		1
Fluoride		2.5
Hydroquinone		2
Iron oxide fume		15
Lead		0.2
Lead arsenate		0.15
Lindane (hexachlorocyclohexane, gamma isomer)		0.5
(t) Lithium hydride		0.025
Magnesium oxide fume		15
Malathion (O,O-dimethyl dithiophosphate of diethyl mercaptosuccinate)		15
Manganese		6
Mercury		0.1
Mercury (organic compounds)		0.01
Methoxychlor (2,2-di-p-methoxyphenyl-1,1,1-trichloroethane)		15
Molybdenum (soluble compounds)		5
(insoluble compounds)		15
Nicotine		0.5
(t) Paradichlorobenzene		450
Parathion (O,O-diethyl O-p-nitrophenylthiophosphate)		0.1
Pentachloronaphthalene		0.5
Pentachlorophenol		0.5
(a)(t) Phosphoric Acid		1
Phosphorus (yellow)		0.1
Phosphorus pentachloride		1
Phosphorus pentasulfide		1
Picric acid		0.1

Milligrams of dust, fume, or mist per cubic meter of air.

(a) Toxicological information or injury reports on these items is of recent origin and most probably will require revision at an early date.

(a) New - Added 1958.

B. Toxic Dusts, Fumes and Mists (Cont.)

	Mg. per Cu. Ft.
Pyrethrum	2
Rotenone	5
Selenium compounds (as Se)	0.1
Sodium hydroxide	2
Sodium fluoroacetate (1080)	0.1
Strychnine	0.15
Sulfuric acid	1
TEDP (Tetraethyl dithionopyrophosphate)	0.2
TEPP (Tetraethyl pyrophosphate)	0.05
Tellurium	0.1
Tetryl (2,4,6-trinitrophenylmethyl nitramine)	1.5
Thiram (tetramethyl thiuram disulfide)	5
Thallium (soluble compounds)	0.1
Titanium dioxide	15
Trichloronaphthalene	5
Trinitrocoluane	1.5
(a) Triorthocresyl phosphate	0.1
Uranium (soluble compounds)	0.05
(insoluble compounds)	0.25
Vanadium	
(V ₂ O ₅ dust)	0.5
(V ₂ O ₅ fume)	0.1
Warfarin (3-[<i>a</i> -acetoxybenzyl]-4-hydroxycoumarin)	0.5
(c) Yttrium and inorganic compounds	5
Zinc oxide fumes	15
Zirconium compounds (as Zr)	5

C. Mineral Dusts

	M.F.F.C.F. ^{***}
Aluminum oxide	50
Asbestos	5
Dust (nuisance, no free silica)	50
Mica (below 5% free silica)	20
Portland cement	50
Talc	20
Silica	
High (above 50% free SiO ₂)	5
Medium (5 to 50% free SiO ₂)	20
Low (below 5% free SiO ₂)	50
Silicon carbide	50
Soapstone (below 5% free SiO ₂)	20

Milligrams of dust, fume, or mist per cubic meter of air.

(t) Toxicological information or injury reports on these items is of recent origin and most probably will require revision at an early date.

***Millions of particles per cubic foot of air.

STATE OF TEXAS
COUNTY OF TRAVIS

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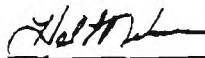
CERTIFICATE

I, the undersigned, hereby certify that in my official capacity as General Counsel, Texas Department of Health, I am authorized to make this certification. I further certify that the attached is a true, correct and exact copy of the following described document:

Occupational Health Regulation No. 3 entitled
"Maximum Permissible Concentrations of
Atmospheric Contaminants in Places of Employment"
-- as adopted by the Texas [State] Board of Health
on June 9, 1958, effective July 1, 1958.

as contained in the official records of the Texas Department of Health.

Witness my hand and the seal of the Texas Department of Health on this the 29th day of April, 1987.



Hal L. Nelson
General Counsel
Texas Department of Health