2018/05/31-01

WORKERS' COMPENSATION BOARD ("WorkSafeBC")

RESOLUTION OF THE BOARD OF DIRECTORS

RE: Occupational Health and Safety Regulation Occupational Exposure Limits

WHEREAS:

Section 225 of the *Workers' Compensation Act* ("*Act*") allows WorkSafeBC to make regulations it considers necessary or advisable in relation to occupational health and safety and occupational environment;

AND WHEREAS:

Section 82 of the *Act* requires the Board of Directors to set and revise as necessary the policies of WorkSafeBC, including policies respecting compensation, assessment, rehabilitation and occupational health and safety and may establish committees and give direction to those committees;

AND WHEREAS:

Section 5.48 of the Occupational Health and Safety Regulation ("Regulation") states, except as otherwise determined by WorkSafeBC, an employer must ensure that no worker is exposed to a substance that exceeds the ceiling limit, short-term exposure limit, or 8-hour TWA limit prescribed by the American Conference of Governmental Industrial Hygienists ("ACGIH"), which is defined to include the publication entitled "Threshold Limit Values and Biological Exposure Indices" ("publication") dated 2002, as amended from time to time;

AND WHEREAS:

The Board of Directors has created, in Prevention Manual Item R5.48-1, a Table of Occupational Exposure Limits ("OELs") for Excluded Substances which substitute for and provide exceptions to ACGIH Threshold Limit Values ("TLVs");

AND WHEREAS:

The ACGIH has amended the publication to publish new or revised TLVs for 33 substances between the years 2013-2015;

AND WHEREAS:

The Board of Directors previously determined any amendments to the publication would not be adopted until such time as the Policy, Regulation and Research Division had consulted with stakeholders and the OEL Review Committee had provided its recommendations as to which amendments should be adopted and which should not;

AND WHEREAS:

The Policy, Regulation and Research Division completed stakeholder consultation on this issue and has advised the Board of Directors on the results of the consultation.

THE BOARD OF DIRECTORS RESOLVES THAT:

1. The Policy statements in Prevention Manual Item R5.48-1 are amended as set out in Appendix A of this resolution, to remove the following sixteen substances from the Table of OELs for Excluded Substances in Policy Item R5.48-1 so that the ACGIH TLVs will apply:

    - Acetone
    - Aliphatic hydrocarbon gases, Alkanes [C1 – C4]
    - Barium sulfate
    - 1-Bromopropane
    - Butane, Isomers
        - n-butane
        - isobutane
    - Ethyl tert-butyl ether
    - 1-Methoxy-2-propanol
    - Methyl formate
    - Methyl isoamyl ketone
    - Methyl isocyanate
    - Naphthalene
    - Oxalic acid, anhydrous
    - Oxalic acid, dihydrate
    - Pentane, all isomers
    - Trichloroacetic acid
    - Triethylamine

2. The Policy statements in Prevention Manual Item R5.48-1 are amended as set out in Appendix A of this resolution, to add the following four OELs onto the Table of OELs for Excluded Substances in Policy Item R5.48-1:

- Glycerin mist, “Total” Aerosol (8-hour TWA of 10 mg/m^3)
- Manganese, elemental and inorganic compounds, as Mn, “Inhalable” fraction (No previous limit)
- Manganese, elemental and inorganic compounds, as Mn, “Respirable” fraction (8-hour TWA Limit of 0.02 mg/m^3)
- Nickel carbonyl, as Ni, (Ceiling Limit of 0.05 ppm)

3. This resolution is effective June 1, 2018.

I, Ralph McGinn, hereby certify for and on behalf of the Board of Directors of WorkSafeBC the above resolutions were duly passed at a meeting of the Board of Directors held in Richmond, British Columbia on May 31, 2018.

RALPH MCGINN, P. ENG
Chair, Board of Directors
Workers’ Compensation Board

RE: Occupational Exposure Limits **ITEM: R5.48-1**

BACKGROUND

1. Explanatory Notes

Section 5.48 provides established limits for a worker's exposure to hazardous chemical substances. Generally, these exposure limits are established according to the Threshold Limit Values ("TLVs") adopted by the American Conference of Governmental Industrial Hygienists ("ACGIH"). However, the Board has authority to make exceptions and adopt occupational exposure limits for specific chemical substances that are not consistent with the TLVs established by the ACGIH. This policy sets out those exceptions.

2. The Regulation

Section 5.48:

Except as otherwise determined by the Board, the employer must ensure that no worker is exposed to a substance that exceeds the ceiling limit, short-term exposure limit, or 8-hour TWA limit prescribed by ACGIH.

Section 5.57:

(1) If a substance identified as any of the following is present in the workplace, the employer must replace it, if practicable, with a material which reduces the risk to workers:

(a) ACGIH A1 or A2, or IARC 1, 2A or 2B carcinogen;
(b) ACGIH reproductive toxin;
(c) ACGIH sensitizer;
(d) ACGIH L endnote.

(2) If it is not practicable to substitute a material which reduces the risk to workers, in accordance with subsection (1), the employer must implement an exposure control plan to maintain workers' exposure as low as reasonably achievable below the exposure limit established under section 5.48.

(3) The exposure control plan must meet the requirements of section 5.54.

3. Preamble to Policy

The following is a preamble to be applied to those exposure limits developed by the Board as an exception to the TLVs established by the ACGIH:

> *An exposure limit is a maximum allowed airborne concentration and is not intended to represent a fine line between safe and harmful conditions. In determining an exposure limit, it is not possible to take into account all factors that could influence the effect that exposure to the substance may have on an individual worker. Therefore, for all hazardous substances, regardless of any assigned exposure limit, the guiding principle is elimination of exposure or reduction to the lowest level that is reasonably achievable below the exposure limit.*
>
> *Due to a wide variation in individual susceptibility, some workers may experience discomfort from some substances at concentrations at or below the exposure limit. Others may be affected more seriously by aggravation of a pre-existing condition, or by development of an occupational disease. Furthermore, other workplace contaminants may affect an individual's response. The effects of combined chemical exposures are often unknown or poorly defined.*

POLICY

1. Table of Occupational Exposure Limits for Excluded Substances

As presented in the table below, the Board has determined exposure limits for the following specific substances, notwithstanding the TLVs established by the ACGIH.

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
ABATE (TEMEPHOS) TOTAL DUST	3383-96-8	mg/m^3	10	20	
ACETAMIDE	60-35-5	No previous limit			
~~ACETONE~~	~~67-64-1~~	~~ppm~~	~~250~~	~~500~~	
ACETONE CYANOHYDRIN	75-86-5	ppm			1
ACETYLENE	74-86-2		Simple asphyxiant		
~~ALIPHATIC HYDROCARBON GASES, ALKANES [C_1 – C_4]~~		~~ppm~~	~~1000~~		
ALLYL AMINE	107-11-9	ppm	2		
ALLYL BROMIDE	106-95-6		No previous limit		
ARGON	7440-37-1		Simple asphyxiant		
ATRAZINE	1912-24-9	mg/m^3	5		
~~BARIUM SULFATE~~	~~7727-43-7~~	~~mg/m^3~~	~~10 (N)~~		
BENZYL CHLORIDE	100-44-7	ppm			1

Substance/Chemical Name		CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
BORON TRIBROMIDE		10294-33-4	ppm			1
BORON TRICHLORIDE		10294-34-5	ppm	No previous limit		
BORON TRIFLUORIDE		7637-07-2	ppm			1
BROMOCHLOROMETHANE		74-97-5	ppm	200	250	
~~1-BROMOPROPANE~~		~~106-94-5~~	~~ppm~~	~~10~~		
~~BUTANE, ISOMERS;~~	~~n-BUTANE~~	~~106-97-8~~	~~ppm~~	~~600~~	~~750~~	
	~~ISOBUTANE~~	~~75-28-5~~		~~No previous limit~~		
BUTENES, ALL ISOMERS, INCLUDING ISOBUTENE		106-98-9, 107-01-7, 590-18-1, 624-64-6, 25167-67-3, 115-11-7		No previous limit		
n-BUTYL ALCOHOL (n-BUTANOL)		71-36-3	ppm	15		30
n-BUTYL ACETATE		123-86-4	ppm	20		
sec-BUTYL ACETATE		105-46-4	ppm	200		
tert-BUTYL ACETATE		540-88-5	ppm	200		
n-BUTYL METHACRYLATE		97-88-1	ppm	50		
CADUSAFOS		95465-99-9		No previous limit		
CALCIUM CARBONATE (incl. LIMESTONE, MARBLE), TOTAL DUST		1317-65-3	mg/m^3	10	20	
CALCIUM SILICATE, naturally occurring as WOLLASTONITE		1344-95-2	mg/m^3	No previous limit		
CALCIUM SILICATE, synthetic nonfibrous		1344-95-2	mg/m^3	10 (E)(N)		
CAPROLACTAM DUST		105-60-2	mg/m^3	1	3	
CAPTAFOL		2425-06-1	mg/m^3	0.1		
CARBARYL		63-25-2	mg/m^3	5		
CARBON DIOXIDE		124-38-9	ppm	5000	15,000	
CARBON DISULFIDE		75-15-0	ppm	4	12	
CARBON MONOXIDE		630-08-0	ppm	25	100	
CARBON TETRACHLORIDE		56-23-5	ppm	2		
CHLOROACETIC ACID		79-11-8	ppm	0.3		
CHLOROBROMOMETHANE (see BROMOCHLOROMETHANE)						
1-CHLORO-1,1-DIFLUOROETHANE		75-68-3	ppm	1000		
CHLORODIFLUOROMETHANE		75-45-6	ppm	500	1250	
CHLOROFORM		67-66-3	ppm	2		
β-CHLOROPRENE		126-99-8	ppm	10		
CHLOROTRIFLUOROMETHANE		75-72-9	ppm	1000		
CHROMIUM, WATER SOLUBLE, Cr VI COMPOUNDS		7440-47-3	mg/m^3	0.025		0.1
CITRAL, INHALABLE		5292-40-5		No previous Limit		
CLOPIDOL		2971-90-6	mg/m^3	10		
CRESOL, ALL ISOMERS		1319-77-3, 95-48-7, 108-39-4, 106-44-5	mg/m^3	10		

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
CUMENE	98-82-8	ppm	25	75	
CYANOGEN	460-19-5	ppm	10		
CYANOGEN BROMIDE	506-68-3		No previous limit		
DIBUTYL PHOSPHATE	107-66-4	ppm	1	2	
DICHLOROMETHANE	75-09-2	ppm	25		
DICYCLOHEXYLMETHANE-4,4'-DIISOCYANATE	5124-30-1	ppm	0.005		0.01
2,4-DICHLOROPHENOXYACETIC ACID AND ITS ESTERS	94-75-7	mg/m^3	10	20	
DIELDRIN	60-57-1	mg/m^3	0.25		
DIETHANOLAMINE	111-42-2	mg/m^3	2		
DIETHYLENE GLYCOL MONOBUTYL ETHER	112–34-5		No previous limit		
N,N-DIETHYLHYDROXYLAMINE	3710-84-7		No previous limit		
DIISOCYANATES, N.O.S.		ppm	0.005		0.01
DIMETHOXYMETHANE	109-87-5	ppm	1000	1250	
DIMETHYL ETHER	115-10-6	ppm	1000		
DIMETHYL SULFATE	77-78-1	ppm			0.1
n-DIOCTYL PHTHALATE	117-84-0	mg/m^3	5		
ENDOSULFAN	115-29-7	mg/m^3	0.1		
ENFLURANE	13838-16-9	ppm	2		
EPICHLOROHYDRIN	106-89-8	ppm	0.1		
ETHYL ACETATE	141-78-6	ppm	150		
ETHYL ISOCYANATE	109-90-0		No previous limit		
ETHYL METHACRYLATE	97-63-2	ppm	50		
~~ETHYL TERT-BUTYL ETHER~~	~~637-92-3~~	~~ppm~~	~~5~~		
ETHYLENE DIBROMIDE	106-93-4	ppm	0.5		
ETHYLENE DICHLORIDE (1,2-DICHLOROETHANE)	107-06-2	ppm	1	2	
ETHYLENE GLYCOL, AEROSOL	107-21-1	mg/m^3			100
ETHYLENE GLYCOL, PARTICULATE	107-21-1	mg/m^3	10	20	
ETHYLENE GLYCOL, VAPOUR	107-21-1	ppm			50
ETHYLENEIMINE	151-56-4	ppm	0.5		
ETHYLENE OXIDE	75-21-8	ppm	0.1	1	
ETHYLIDENE NORBORNENE	16219-75-3	ppm			5
FLUORINE	7782-41-4	ppm	0.1		
FLUOROXENE	406-90-6	ppm	2		
FOLPET	133-07-3		No previous limit		
FORMALDEHYDE	50-00-0	ppm	0.3		1
FURFURAL	98-01-1	ppm	2		
FURFURYL ALCOHOL	98-00-0	ppm	5	10	
GLYCERIN MIST, TOTAL AEROSOL	56-81-5	mg/m^3	10		
GLYCERIN MIST, RESPIRABLE FRACTION	56-81-5	mg/m^3	3		
GYPSUM, TOTAL DUST	13397-24-5	mg/m^3	10	20	
HALOTHANE	151-67-7	ppm	2		

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
HARD METALS, containing COBALT and TUNGSTEN CARBIDE, as Co	7440-48-4, 12070-12-1	mg/m^3	No previous limit		
HELIUM	7440-59-7		Simple asphyxiant		
HEXAMETHYLENE DIISOCYANATE	822-06-0	ppm	0.005		0.01
n-HEXANE	110-54-3	ppm	20		
HEXANE, ALL ISOMERS except n-HEXANE		ppm	200		
HEXYLENE GLYCOL	107-41-5	ppm			25
HYDROGEN	1333-74-0		Simple asphyxiant		
HYDROGEN FLUORIDE, as F	7664-39-3	ppm			2
HYDROGEN SULFIDE	7783-06-4	ppm			10
INDENE	95-13-6	ppm	10		
IODIDES			No previous limit		
IODINE	7553-56-2	ppm			0.1
IRON OXIDE, FUME	1309-37-1	mg/m^3	5	10	
IRON PENTACARBONYL	13463-40-6	ppm	0.01		
IRON SALTS, SOLUBLE, as Fe		mg/m^3	1	2	
ISOBUTYL ACETATE	110-19-0	ppm	150		
ISOPHORONE DIISOCYANATE	4098-71-9	ppm	0.005		0.01
ISOPROPYL GLYCIDYL ETHER (IGE)	4016-14-2	ppm			50
LIQUIFIED PETROLEUM GAS	68476-85-7	ppm	1000	1250	
LITHIUM HYDRIDE	7580-67-8	mg/m^3	0.025		
LITHIUM HYDROXIDE	1310-65-2	mg/m^3			1
MAGNESIUM OXIDE, RESPIRABLE DUST AND FUME, as Mg	1309-48-4	mg/m^3	3	10	
MALEIC ANHYDRIDE	108-31-6	ppm	0.1		
MANGANESE, ELEMENTAL AND INORGANIC COMPOUNDS, as Mn, TOTAL DUST	7439-96-5	mg/m^3	0.2		
MANGANESE, ELEMENTAL AND INORGANIC COMPOUNDS, as Mn, INHALABLE FRACTION	7439-96-5	mg/m^3	No previous limit		
MANGANESE, ELEMENTAL AND INORGANIC COMPOUNDS, as Mn, RESPIRABLE FRACTION	7439-96-5	mg/m^3	0.02		
MERCURY, ARYL COMPOUNDS	7439-97-6	mg/m^3	0.05		0.1
MESITYL OXIDE	141-79-7	ppm	10	25	
METHOMYL	16752-77-5	mg/m^3	2.5		
METHOXYFLURANE	76-38-0	ppm	2		
~~1-METHOXY-2-PROPANOL~~	~~107-98-2~~	~~ppm~~	~~50~~	~~75~~	
2-METHOXY-1-PROPANOL	1589-47-5	ppm	20	40	
1-METHOXYPROPYL-2-ACETATE	108-65-6	ppm	50	75	
2-METHOXYPROPYL-1-ACETATE	70657-70-4	ppm	20	40	
METHYLENE BISPHENYL ISOCYANATE	101-68-8	ppm	0.005		0.01
METHYLENE bis (4-CYCLOHEXYL-ISOCYANATE)	5124-30-1	ppm	0.005		0.01
4,4'-METHYLENEDIANILINE	101-77-9	ppm	0.01		
METHYL ETHYL KETONE (MEK)	78-93-3	ppm	50	100	

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
~~METHYL FORMATE~~	~~107-31-3~~	~~ppm~~	~~100~~	~~150~~	
~~METHYL ISOAMYL KETONE~~	~~110-12-3~~	~~ppm~~	~~50~~		
~~METHYL ISOCYANATE~~	~~624-83-9~~	~~ppm~~	~~0.02~~		
METHYL PARATHION	298-00-0	mg/m^3	0.2		
METHYL PROPYL KETONE (2-PENTANONE)	107-87-9	ppm	150	250	
~~NAPTHALENE~~	~~91-20-3~~	~~ppm~~	~~10~~	~~15~~	
1,5-NAPHTHYLENE DIISOCYANATE	3173-72-6	ppm	0.005		0.01
NATURAL RUBBER LATEX, AS TOTAL PROTEINS, INHALABLE	9006-04-6	mg/m^3	0.001		
NEON	7440-01-9		Simple asphyxiant		
NICKEL, ELEMENTAL, SOLUBLE INORGANIC COMPOUNDS (NOS)	7440-02-0	mg/m^3	0.05		
NICKEL, INSOLUBLE INORGANIC COMPOUNDS (NOS)	7440-02-0	mg/m^3	0.05		
NICKEL CARBONYL, as Ni	13463-39-3	ppm	0.001		0.05
NITROGEN	7727-37-9		Simple asphyxiant		
NITROGEN DIOXIDE	10102-44-0	ppm			1
2-NITROPROPANE	79-46-9	ppm	5		
NITROUS OXIDE	10024-97-2	ppm	25		
OIL MIST, MINERAL, MILDLY REFINED		mg/m^3	0.2		
OIL MIST, MINERAL, SEVERELY REFINED		mg/m^3	1		
~~OXALIC ACID, ANHYDROUS~~	~~144-62-7~~	~~mg/m^3~~	~~1~~	~~2~~	
~~OXALIC ACID, DIHYDRATE~~	~~6153-56-6~~		~~No previous limit~~		
PENTACHLOROPHENOL	87-86-5	mg/m^3	0.5		
~~PENTANE, ALL ISOMERS~~	~~78-78-4; 109-66-0; 463-82-1~~	~~ppm~~	~~600~~		
2,4-PENTANEDIONE	123-54-6		No previous limit		
PERACETIC ACID	79-21-0		No previous limit		
PHENYL ISOCYANATE	103-71-9	ppm	0.005		0.01
PHENYL MERCAPTAN	108-98-5	ppm			0.1
PHTHALIC ANHYDRIDE	85-44-9	ppm	1		
o-PHTHALODINITRILE	91-15-6		No previous limit		
PIPERAZINE AND ITS SALTS, as PIPERAZINE	110-85-0	mg/m^3	0.3	1	
PIPERIDINE	110-89-4	ppm	1		
PLASTER OF PARIS, TOTAL DUST	26499-65-0	mg/m^3	10	20	
PROPOXUR	114-26-1	mg/m^3	0.5		
PROPYLENEIMINE	75-55-8	ppm	2		
RHODIUM, METAL AND INSOLUBLE COMPOUNDS, as Rh	7440-16-6	mg/m^3	0.1	0.3	
RHODIUM, SOLUBLE COMPOUNDS, as Rh	7440-16-6	mg/m^3	0.001	0.003	
SELENIUM AND COMPOUNDS, as Se	7782-49-2	mg/m^3	0.1		

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
SILICA, AMORPHOUS:					
DIATOMACEOUS EARTH, UNCALCINED, TOTAL DUST	61790-53-2	mg/m^3	4		
DIATOMACEOUS EARTH, UNCALCINED, RESPIRABLE DUST	61790-53-2	mg/m^3	1.5		
PRECIPITATED SILICA and SILICA GEL, TOTAL DUST	112926-00-8	mg/m^3	4		
PRECIPITATED SILICA and SILICA GEL, RESPIRABLE DUST	112926-00-8	mg/m^3	1.5		
SILICA FUME, TOTAL DUST	69012-64-2	mg/m^3	4		
SILICA FUME, RESPIRABLE DUST	69012-64-2	mg/m^3	1.5		
SILICON TETRAHYDRIDE (SILANE)	7803-62-5	ppm	0.5	1	
SILVER AND COMPOUNDS, as Ag	7440-22-4	mg/m^3	0.01	0.03	
SIMAZINE	122-34-9	mg/m^3	No previous limit		
STEARATES	57-11-4; 557-04-0; 557-05-1; 822-16-2	mg/m^3	10 (J)		
STODDARD SOLVENT (MINERAL SPIRITS)	8052-41-3	mg/m^3	290	580	
STYRENE	100-42-5	ppm	50	75	
SULFUR DIOXIDE	7446-09-5	ppm	2	5	
SULPROFOS	35400-43-2	mg/m^3	1		
TANTALUM and TANTALUM OXIDE dusts, as Ta	7440-25-7	mg/m^3	5		
1,1,1,2-TETRACHLORO-2,2-DIFLUOROETHANE	76-11-9	ppm	500		
1,1,2,2-TETRACHLORO-1,2-DIFLUOROETHANE	76-12-0	ppm	200		
TETRAETHYL LEAD, as Pb	78-00-2	mg/m^3	0.075		
TETRAMETHYL LEAD, as Pb	75-74-1	mg/m^3	0.075		
THIONYL CHLORIDE	7719-09-7	ppm			1
THIRAM	137-26-8	mg/m^3	1		
2,4-TOLUENE DIISOCYANATE (TDI)	584-84-9	ppm	0.005		0.01
2,6-TOLUENE DIISOCYANATE	91-08-7	ppm	0.005		0.01
2,4- and 2,6-TOLUENE DIISOCYANATE AS A MIXTURE	584-84-9 91-08-7	ppm	No previous limit (see section 5.51, *OHSR*)		
TRIBUTYL PHOSPHATE	126-73-8	ppm	0.2		
~~TRICHLOROACETIC ACID~~	~~76-03-9~~	~~ppm~~	~~1~~		
1,2,3-TRICHLOROPROPANE	96-18-4	ppm	10		
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	ppm	500	1250	
~~TRIETHYLAMINE~~	~~121-44-8~~	~~ppm~~	~~1~~	~~3~~	
TRIMELLITIC ANHYDRIDE	552-30-7	mg/m^3			0.04
TRIMETHYL HEXAMETHYLENE DIISOCYANATE	28679-16-5	ppm	0.005		0.01
TRIORTHOCRESYL PHOSPHATE	78-30-8	mg/m^3	0.1		
TRI-n-BUTYLTIN COMPOUNDS	688-73-3	mg/m^3	0.05		
TUNGSTEN as W					
Metal and insoluble compounds	7440-33-7	mg/m^3	5	10	
Soluble compounds	7440-33-7	mg/m^3	1	3	
URANIUM COMPOUNDS, NATURAL, SOLUBLE, as U	7440-61-1	mg/m^3	0.05		

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
VEGETABLE OIL MIST, RESPIRABLE FRACTION, EXCEPT CASTOR, CASHEW NUT, OR SIMILAR IRRITATING OILS	8008-89-7	mg/m^3	3		
VINYLIDENE CHLORIDE	75-35-4	ppm	1		
VINYL TOLUENE, ALL ISOMERS	25013-15-4	ppm	25	75	
WARFARIN	81-81-2	mg/m^3	0.1		
WOOD DUST:					
ALLERGENIC		mg/m^3	1		
NON-ALLERGENIC, HARDWOOD		mg/m^3	1		
NON-ALLERGENIC, SOFTWOOD		mg/m^3	2.5		
ZINC STEARATE, TOTAL DUST	557-05-1	mg/m^3	10	20	

(E) = the value is for particulate matter containing no asbestos and less than 1% crystalline silica
(N) = the 8-hour TWA listed in the Table is for the total dust. The substance also has an 8-hour TWA of 3 mg/m^3 for the respirable fraction
(J) = does not include stearates of toxic metals

2. Dusts

The Board categorizes particulates that are insoluble or poorly soluble in water and do not cause toxic effects other than by inflammation or the mechanism of "lung overload", as “nuisance dusts”.

A “nuisance dust” will have an exposure limit or TLV of 10 mg/m^3 for total particulate. It is recognized that the respirable fraction of “nuisance dusts” may also be measured. The equivalent exposure limit for respirable particulate is 3 mg/m^3. Respirable particulate refers to the fraction of inhaled dust that is capable of passing through the upper respiratory tract to the gas exchange region of the lung. Total particulate refers to a wide range of particle sizes capable of being deposited in the various regions of the respiratory tract.

EFFECTIVE DATE: June 1, 2018
AUTHORITY: s. 5.48, Occ*upational Health and Safety Regulation*
CROSS REFERENCES:

HISTORY:

Effective June 1, 2018, housekeeping changes were made to add the following substances to the Table of Occupational Exposure Limits for Excluded Substances in accordance with the OEL review and adoption procedure:

GLYCERIN MIST, TOTAL AEROSOL

MANGANESE, ELEMENTAL AND INORGANIC COMPOUNDS, as Mn, RESPIRABLE FRACTION

MANGANESE, ELEMENTAL AND INORGANIC COMPOUNDS, as Mn, INHALABLE FRACTION	NICKEL CARBONYL, as Ni

Effective June 1, 2018, housekeeping changes were made to remove sixteen substances to the Table of Occupational Exposure Limits for Excluded Substances in accordance with the OEL review and adoption procedure:

ACETONE	METHYL ISOAMYL KETONE
ALIPHATIC HYDROCARBON GASES, ALKANES [C_1 – C_4]	METHYL ISOCYANATE
BARIUM SULFATE	NAPTHALENE
1-BROMOPROPANE	OXALIC ACID, ANHYDROUS
BUTANE, ISOMERS; • n-BUTANE • ISOBUTANE	OXALIC ACID, DIHYDRATE
ETHYL TERT-BUTYL ETHER	PENTANE, ALL ISOMERS
1-METHOXY-2-PROPANOL	TRICHLOROACETIC ACID
METHYL FORMATE	TRIETHYLAMINE

The following substances / chemical names were corrected:

- GLYCERIN MIST, RESPIRABLE was corrected to GLYCERIN MIST, RESPIRABLE FRACTION
- MANGANESE, ELEMENTAL AND INORGANIC COMPOUNDS, as Mn was corrected to MANGANESE, ELEMENTAL AND INORGANIC COMPOUNDS, as Mn, TOTAL DUST
- NICKEL CARBONYL was corrected to NICKEL CARBONYL, as Ni

Effective June 1, 2017, housekeeping changes were made to remove the following substances to the Table of Occupational Exposure Limits for Excluded Substances in accordance with the OEL review and adoption procedure:

ACETAMIDE	FOLPET
ISOBUTANE	FURFURAL
CADUSAFOS	HEXYLENE GLYCOL
CAPTAFOL	PHTHALIC ANHYDRIDE
β-CHLOROPRENE	STEARATES

ETHYLENE GLYCOL (AEROSOL)	TUNGSTEN as W, metal and insoluble compounds; soluble compounds

Effective July 15, 2016, housekeeping changes were made to add the following substances to the Table of Occupational Exposure Limits for Excluded Substances in accordance with the OEL review and adoption procedure.

BORON TRIBROMIDE	HARD METALS, containing COBALT and TUNGSTEN CARBIDE as Co
BORON TRICHLORIDE	ISOBUTYL ACETATE
BORON TRIFLUORIDE	PROPOXUR
SEC-BUTYL ACETATE	SIMAZINE
TERT-BUTYL ACETATE	TOLUENE DIISOCYANATE, 2,4- and 2,6- as a mixture
CALCIUM SILICATE, naturally occurring as WOLLASTONITE	TRIORTHOCRESYL PHOSPHATE
CALCIUM SILICATE, synthetic nonfibrous	WARFARIN
CYANOGEN	

Effective May 1, 2015, changes were made to add the following substances to the Table of Occupational Exposure Limits for Excluded Substances:

ACETYLENE	OXALIC ACID, ANHYDROUS and DIHYDRATE
CYANOGEN BROMIDE (NEW TLV)	1,2,3-TRICHLOROPROPANE
LITHIUM HYDRIDE	TRIETHYLAMINE
METHYL FORMATE	

Effective February 1, 2015, changes were made to remove eight substances from the Table of Occupational Exposure Limits for Excluded Substances:

BERYLLIUM AND COMPOUNDS	ALPHA-METHYL STYRENE
CARBONYL SULFIDE	NONANE
DIACETYL	PORTLAND CEMENT
ETHYL FORMATE	VANADIUM PENTOXIDE

On April 7, 2014 changes were made to correct the exposure limit for Ethylidene norbornene.

Effective April 1, 2014, changes were made to add 17 substances to the Table of Occupational Exposure Limits for Excluded Substances:

ARGON
ATRAZINE
BARIUM SULFATE
1-BROMOPROPANE
ETHYLIDENE NORBORNENE
ETHYL ISOCYANATE
HELIUM
HYDROGEN
METHOMYL
METYHL ISOCYANATE
NAPTHALENE
NEON
NITROGEN
PENTACHLOROPHENOL
PENTANE, all isomers
PERACETIC ACID
TRICHLOROACETIC ACID

Effective May 1, 2013, changes were made to add eight substances to the Table of Occupational Exposure Limits for Excluded Substances:

ALIPHATIC HYDROCARBON GASES, ALKANES [C_1 – C_4]
CLOPIDOL
DIETHYLENE GLYCOL MONOBUTYL ETHER
N,N–DIETHYLHYDROXYLAMINE
ETHYL TERT-BUTYL ETHER
MANGANESE, elemental and inorganic compounds, as Mn
METHYL ISOAMYL KETONE
TRIBUTYL PHOSPHATE

Effective April 10, 2012, changes were made to add six substances to the Table of Occupational Exposure Limits for Excluded Substances:

ALLY BROMIDE
DIACETYL
o-PHTHALODINITRILE
CARBONYL SULFIDE
ETHYL FORMATE
NONANE

CAS No for piperazine and its salts was corrected from 142-64-3 to 110-85-0.

Housekeeping change effective October 14, 2011 to correct the reference to section 5.57 of the regulation. This is not a substantive change.

Effective September 15, 2011, changes were made to remove seven substances from the Table of Occupational Exposure Limits for Excluded Substances:

ACETIC ANHYDRIDE
ETHYL BENZENE
SOAPSTONE
CARBON BLACK
METHYL ISOPROPYL KETONE
SOAPSTONE, RESPIRABLE
4,4' THIOBIS (6-tert-butyl-m-CRESOL)

Effective June 1, 2011, changes were made to remove three substances from the Table of Occupational Exposure Limits for Excluded Substances:

COTTON DUST, raw METHYL ISOBUTYL KETONE
THALLIUM AND SOLUBLE COMPOUNDS

Housekeeping changes effective June 1, 2011, to replace “exposure level” with “exposure limit” in item 3 of the Background of this Policy. These changes also add 2,4-Pentanedione to the Table of Occupational Exposure Limits for Excluded Substances pursuant to the Occupational Exposure Limit review and adoption procedure approved by the Board of Directors at their March 2010 meeting.

Housekeeping changes effective April 19, 2011 in accordance with the new Occupational Exposure Limit review and adoption procedure approved by the Board of Directors at their March 2010 meeting. The changes add seven substances to the Table of Occupational Exposure Limits for Excluded Substances:

ACETIC ANHYDRIDE CARBON BLACK
ETHYL BENZENE MALEIC ANHYDRIDE
METHYL ISOPROPYL KETONE SOAPSTONE
4,4' THIOBIS (6-tert-butyl-m-CRESOL)

Housekeeping changes effective September 15, 2010 to update regulation reference, delete practice reference, and make formatting changes.

The Table of Occupational Exposure Limits for Excluded Substances has been amended to include 18 substances for which the Board of Directors has made an exception to the adoption of these substances for which the American Conference of Governmental Industrial Hygienists changed the Threshold Limit Values in 2008 and 2009. The effect of this amendment is that the substances will be re-assigned the OELs that were in effect prior to the revision by ACGIH. The Table of Occupational Exposure Limits for Excluded Substances has been amended to delete two substances so the more protective American Conference of Governmental Industrial Hygienists Threshold Limit Values will now apply to these substances. The revisions were made to the Table effective September 1, 2010.

The Table of Occupational Exposure Limits for Excluded Substances has been amended to include new or revised substances for which the American Conference of Governmental Industrial Hygienists has changed the Threshold Limit Values in 2010. The effect of this amendment was that the existing occupational exposure limits for these substances continue to be in effect. These substances were added to the Table effective April 1, 2010.

This item was originally developed to implement the amendments made to the *Occupational Health and Safety Regulation*, effective October 29, 2003 pertaining to occupational exposure limits. A review of the policy was conducted to ensure that all substances for which an exception was warranted were listed, and there was no duplication with the information provided by the ACGIH.

APPLICATION:

Each amendment of this policy applies to incidents occurring on and after the effective date of the amendment. If a decision made before the amendment effective date is within the appeal period, at Review Division, or at WCAT, it remains subject to the policy in effect at the time of the incident.