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Update 2011 – 7

TO: HOLDERS OF THE *PREVENTION MANUAL*

This update of the *Prevention Manual* contains amendments implemented since update 2011 – 6.

This update includes housekeeping amendments **effective October 14, 2011**:

- Policy R5.48-1 – Chemical and Biological Substances – Exposure Limits and Designations
- Policy R30.8-1 – Laboratories – General Requirements – Fume Hoods (Ventilation Systems)

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Attachments

PREVENTION MANUAL
Transmittal Sheet for Update 2011-7

Check As Done	Remove Old Pages Numbered/Titled:	Insert New Pages Numbered/Titled:
<input type="checkbox"/>	R5.48-1	Pages 1 to 9
<input type="checkbox"/>	R30.8-1	Pages 1 to 5

RE: Chemical and Biological Substances -
Exposure Limits and Designations

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	
ACETONE	67-64-1	ppm	250	500	
ACETONE CYANOHYDRIN	75-86-5	ppm			1
ALLYL AMINE	107-11-9	ppm	2		
BENZYL CHLORIDE	100-44-7	ppm			1
BERYLLIUM AND COMPOUNDS, AS Be	7440-41-7	mg/m ³	0.002	0.01	
BROMOCHLOROMETHANE	74-97-5	ppm	200	250	
n-BUTANE	106-97-8	ppm	600	750	

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
BUTENES, ALL ISOMERS, INCLUDING ISOBUTENE	106-98-9, 107-01-7, 590-18-1, 624-64-6, 25167-67-3, 115-11-7	ppm	No previous limit	No previous limit	No previous limit
n-BUTYL ALCOHOL (n-BUTANOL)	71-36-3	ppm	15		30
n-BUTYL ACETATE	123-86-4	ppm	20		
n-BUTYL METHACRYLATE	97-88-1	ppm	50		
CALCIUM CARBONATE (incl. LIMESTONE, MARBLE), TOTAL DUST	1317-65-3	mg/m ³	10	20	
CAPROLACTAM DUST	105-60-2	mg/m ³	1	3	
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		
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	ppm	No Previous Limit	No Previous Limit	No Previous Limit
CRESOL, ALL ISOMERS	1319-77-3, 95-48-7, 108-39-4, 106-44-5	mg/m ³	10		
CUMENE	98-82-8	ppm	25	75	
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-DICHLOROPHOENOXYACETIC 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		

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling 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 METHACRYLATE	97-63-2	ppm	50		
ETHYLENE DIBROMIDE	106-93-4	ppm	0.5		
ETHYLENE DICHLORIDE (1,2-DICHLOROETHANE)	107-06-2	ppm	1	2	
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	
FLUORINE	7782-41-4	ppm	0.1		
FLUOROXENE	406-90-6	ppm	2		
FORMALDEHYDE	50-00-0	ppm	0.3		1
FURFURYL ALCOHOL	98-00-0	ppm	5	10	
GLYCERIN MIST, RESPIRABLE	56-81-5	mg/m ³	3		
GYPSUM, TOTAL DUST	13397-24-5	mg/m ³	10	20	
HALOTHANE	151-67-7	ppm	2		
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		
HYDROGEN FLUORIDE, as F	7664-39-3	ppm			2
HYDROGEN SULFIDE	7783-06-4	ppm			10
INDENE	95-13-6	ppm	10		
IODIDES		ppm	No previous limit	No previous limit	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	

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
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 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		
MERCURY, ARYL COMPOUNDS	7439-97-6	mg/m ³	0.05		0.1
MESITYL OXIDE	141-79-7	ppm	10	25	
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	
METHYL PARATHION	298-00-0	mg/m ³	0.2		
METHYL PROPYL KETONE (2-PENTANONE)	107-87-9	ppm	150	250	
alpha-METHYL STYRENE	98-83-9	ppm	50	75	100
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		
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	13463-39-3	ppm	0.001		
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		

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
OIL MIST, MINERAL, SEVERELY REFINED		mg/m ³	1		
2,4-PENTANEDIONE	123-54-6	ppm	No previous limit	No previous limit	No previous limit
PHENYL ISOCYANATE	103-71-9	ppm	0.005		0.01
PHENYL MERCAPTAN	108-98-5	ppm			0.1
PIPERAZINE AND ITS SALTS, as PIPERAZINE	142-64-3	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	
PORTLAND CEMENT	65997-15-1	mg/m ³	10 (E,N)		
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		
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	
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		

Substance/Chemical Name	CAS No.	Unit	8-hour TWA Limit	Short-term exposure Limit, STEL	Ceiling Limit
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
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	ppm	500	1250	
TRIMELLITIC ANHYDRIDE	552-30-7	mg/m ³			0.04
TRIMETHYL HEXAMETHYLENE DIISOCYANATE	28679-16-5	ppm	0.005		0.01
TRI-n-BUTYL TIN COMPOUNDS	688-73-3	mg/m ³	0.05		
URANIUM COMPOUNDS, NATURAL, SOLUBLE, as U	7440-61-1	mg/m ³	0.05		
VANADIUM PENTOXIDE, RESPIRABLE DUST and FUME, as V ₂ O ₅	1314-62-1	mg/m ³			0.05
VANADIUM PENTOXIDE, TOTAL DUST, as V ₂ O ₅	1314-62-1	mg/m ³	0.2		
VEGETABLE OIL MIST, RESPIRABLE FRACTION, EXCEPT CASTOR, CASHEW NUT, OR SIMILAR IRRITATING OILS	8008-89-7	mg/m ³	3		
VINYLDENE CHLORIDE	75-35-4	ppm	1		
VINYL TOLUENE, ALL ISOMERS	25013-15-4	ppm	25	75	
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/m³ for the respirable fraction

(G) = as measured by the vertical elutriator, cotton-dust sampler, see TLV Documentation

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/m³ 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/m³. 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:	September 15, 2011
AUTHORITY:	s. 5.48, <i>Occupational Health and Safety Regulation</i>
CROSS REFERENCES:	
HISTORY:	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 CARBON BLACK ETHYL BENZENE METHYL ISOPROPYL KETONE SOAPSTONE 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.

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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.

**RE: Laboratories –
General Requirements – Fume Hoods
(Ventilation Systems)**

ITEM: R30.8-1

BACKGROUND

1. Explanatory Notes

Section 30.8 sets out the general requirements relating to fume hoods in laboratories.

2. The Regulation

Section 30.8:

- (1) A laboratory fume hood and its related ductwork must be designed, installed and maintained in accordance with the *Industrial Ventilation, A Manual of Recommended Practice*, published by the American Conference of Governmental Industrial Hygienists, as amended from time to time.
- (2) A laboratory fume hood must
 - (a) be connected to a local exhaust ventilation system,
 - (b) provide average face velocities of 0.4 m/s (80 fpm) to 0.6 m/s (120 fpm) across the operational face opening,
 - (c) not have face velocities of less than 80% of the average face velocity required in paragraph (b) at any point across its operational face opening, and
 - (d) not have face velocities of more than 120% of the average face velocity required in paragraph (b) at any point across its operational face opening.
- (2.1) A laboratory fume hood must have a sash that is positioned to protect the upper body and face of a worker working in the laboratory fume hood from accidental releases of the contents of the hood while allowing hand and arm access to equipment inside the hood.
- (2.2) A laboratory fume hood with a movable sash must be clearly marked to identify the maximum size of the operational face opening that will maintain the average face velocities required in subsection (2) (b).

- (2.3) The employer must ensure
- (a) that before it is used, a commercially manufactured laboratory fume hood has been certified as being tested by the manufacturer, and
 - (b) following installation and before it is used, a custom built laboratory fume hood is tested on site by a qualified person.
- (2.4) A laboratory fume hood tested under subsection (2.3) must demonstrate containment not greater than the control level of 0.05 ppm when tested under "as manufactured " test conditions in accordance with the methods described in ANSI/ASHRAE Standard 110-1995, Method of Testing Performance of Laboratory Fume Hoods.
- (2.5) The installation of a laboratory fume hood must be certified by a professional engineer.
- (3) A laboratory fume hood must be located to prevent cross drafts or other disruptive forces from lowering the air flow across the operational face opening to unacceptable levels.
- (4) A laboratory fume hood and its ductwork must be constructed from materials compatible with its use.
- (5) A laboratory fume hood that will be or is being used for working with
- (a) radioactive material in amounts that exceed the exemption quantity specified by the Canadian Nuclear Safety Commission, or
 - (b) perchloric acid
- must be clearly labelled with applicable restrictions on its use.
- (6) A laboratory fume hood must not be used for storage of chemicals unless it is used exclusively for this purpose and is labelled with this limitation.
- (7) Controls for the operation of a laboratory fume hood and its service fixtures must be
- (a) located on the outside of the laboratory fume hood, and
 - (b) immediately accessible to the worker conducting work in the laboratory fume hood.
- (8) Despite subsection (7), water taps may be located inside a laboratory fume hood if the main shutoff valve for the water is located outside the laboratory fume hood.

- (9) Equipment being used in a laboratory fume hood must
 - (a) be kept at least 15 cm (6 in.) from the operational face opening of the laboratory fume hood, and
 - (b) not adversely affect airflow into the laboratory fume hood.
- (10) Written procedures must be developed and implemented to ensure safe use and operation of a laboratory fume hood.

Section 30.9:

- (1) Face velocities over the operational face opening of a laboratory fume hood must be quantitatively measured and recorded.
- (2) The ability of a laboratory fume hood to
 - (a) maintain an inward flow of air across the operational face opening, and
 - (b) contain contaminantsmust be assessed and recorded using a smoke tube or other suitable qualitative method.
- (3) The actions described in subsections (1) and (2) must be performed
 - (a) after the laboratory fume hood is installed and before it is used,
 - (b) at least once in each 12 month period after installation, and
 - (c) after any repair or maintenance that could affect the air flow of the hood.
- (4) If a laboratory fume hood is found to be operating with an average face velocity of less than 90% of the average face velocity required in section 30.8 (2), the employer must immediately take corrective action to bring the average face velocity within the required range of velocities.
- (5) Airflow in a laboratory fume hood must be monitored continuously if loss of airflow will result in risk to a worker.
- (6) A laboratory fume hood that is being installed must have an alarm capable of indicating when the average face velocity falls below the minimum average face velocity level required in section 30.8 (2) when the hood is in use.

POLICY

Section 30.8(2) specifies fume hood exhaust ventilation rates in terms of air velocities measured over the operational face area of the hood. The operational face area is determined by the height of the sash and will vary with the work carried out in the fume hood.

The air velocity is the average of measurements made over 6 points at the operational face of the hood with the sash raised to its highest position. A calibrated anemometer must be used.

If the measured average velocity is less than specified in section 30.8(2), repeated measurements must be made with the sash lowered successively until the specified average air velocity is attained. The sash height where this is determined must be marked in accordance with section 30.8(2.2). The minimum sash height is 12 inches.

If the fume hood cannot be used at the height determined above, modification is required to improve the ventilation so the specified air velocities are maintained at the sash height required for the work performed in the fume hood.

Smoke tube tests must be done to determine whether conditions of air turbulence exist at the face of the hood. If conditions of severe turbulence exist so that air spills out past the hood face, the condition must be corrected.

When a sash height adjustment is necessary on a fume hood that is part of a manifolded system (several hoods serviced by a single exhaust fan), all fume hoods in the system must be rechecked at the completion of the adjustments to ensure face velocity compliance (this operation may have to be repeated several times before compliance is achieved).

EFFECTIVE DATE: April 1, 2001
AUTHORITY: ss. 30.8 and 30.9, *Occupational Health and Safety Regulation*
CROSS REFERENCES:

HISTORY

Housekeeping changes effective October 14, 2011 to reflect a change in the regulation to make alarms mandatory.

Housekeeping changes effective September 15, 2010 to update Regulation provisions and consequential changes to text, delete practice reference and make formatting changes.

This Item resulted from an editorial consolidation of prevention policies into the *Prevention Manual*, which was effective on October 1, 2000.

The Policy in this Item continued the substantive requirements that existed before the consolidation, with any wording changes necessary to reflect legislative and other changes that have occurred. Policy No. 76.05 in the former Prevention Division *Policy and Procedure Manual* was replaced by this Item. A housekeeping change was made on December 14, 2001. A cross-reference correction was made on March 30, 2004 to reflect regulatory amendments relating to occupational exposure limits, effective October 29, 2003.

APPLICATION:

The application of this policy remains unchanged from its previous authority under Policy No. 76.05 of the former Prevention Division *Policy and Procedure Manual*.