

OCCUPATIONAL HEALTH CONSULTATION

Updating of Occupational Exposure Limits (OELs) – American Conference of Governmental Industrial Hygienists (ACGIH) Recommendations

Occupational Exposure Limits (OELs) restrict the amount and duration of worker exposure to hazardous workplace substances such as asbestos, benzene and lead.

Consultation on the annual revised limits recommended by the American Conference of Governmental Industrial Hygienists (ACGIH) is the foundation of the Ministry of Labour, Training and Skills Development's (MLTSD or ministry) OEL update process. Through this process, the ministry has successfully updated OELs for over 200 hazardous substances since 2004. This is the ministry's 13th consultation under the OEL update process. The proposed changes are primarily based on the ACGIH's recommended changes to OELs for the years 2018 and 2019.

Additional Regulatory Changes Proposed

This year, in addition to consulting on new or revised OELs based on the ACGIH recommendations for 2018 and 2019, the MLTSD is proposing to:

- Align the current OELs for Silica in [Regulation 833 – Control of Exposure to Biological or Chemical Agents](#) (Reg. 833) and [O. Reg. 490/09 – Designated Substances](#) (O. Reg. 490/09) under the [Occupational Health and Safety Act \(OHSA\)](#) with the limits recommended by the ACGIH.
- Align the current OELs for Hydrogen sulfide in Reg. 833 with the limits recommended by the ACGIH.
- Adopt the 2019 version of CSA standard CAN/CSA-Z180.1:19, *Compressed breathing air and systems* in Reg. 833, O. Reg. 490/09 and [O. Reg. 278/05 – Asbestos on Construction Projects and in Buildings and Repair Operations](#) (O. Reg. 278/05).

Details on all proposals are provided below.

Proposed OEL Changes

The tables posted set out proposed new or revised OELs or listings for substances resulting from changes recommended by the ACGIH for the years 2018 and 2019. Further information about the ACGIH's OEL development process and intended changes and how stakeholders can comment is available at the ACGIH's site ["Notice of Intended Changes \(NIC\)"](#).

Proposed changes based on the 2018 ACGIH recommendations include the following

- Addition of listings for 7 substances to regulation: Aldicarb, Allyl methacrylate, Bendiocarb, Boron trifluoride ethers, tert-Butyl hydroperoxide, Carfentrazone-ethyl, and Fludioxonil.

- Revisions to exposure limits and/or listings for 11 substances currently regulated: Chlorine, Chlorine dioxide, Chromium and inorganic compounds, N, N-Dimethyl acetamide, Dimethylformamide, Lead chromate, Methane, Natural gas, Paraquat, Phosphine, and Thioglycolic acid.
- Removal of separate listings and OELs for 9 substances:
 - Calcium chromate, Chromite ore processing, Chromyl chloride, Strontium chromate, Zinc chromates. These substances continue to be regulated under listing for Chromium and inorganic compounds.
 - Ethyl cyanoacrylate and Methyl 2-cyanoacrylate combined into a single listing - Cyanoacrylates, Ethyl and Methyl.
 - Isopropyl acetate and n-Propyl acetate combined into a single listing - Propyl acetate isomers.
- Removal of the listing and OELs for Insoluble Cr VI compounds.

Proposed changes based on the 2019 ACGIH recommendations include the following:

- Addition of listings for 9 substances to regulation: Cyanazine, Dimethylphenol (all isomers), Indium tin oxide, Methyltetrahydrophthalic anhydride isomers, Monomethylformamide, o-Phthalaldehyde, Propylene glycol ethyl ether, Sulfoxaflor and Thiacloprid.
- Revisions to exposure limits and/or listings for 20 substances currently regulated: Chlordane, o-Chlorobenzylidene malonitrile, Cobalt and inorganic compounds, Dinitrobenzene (all isomers), Dinitro-o-cresol, EPN, Fluorine, Isobutyl nitrite, 4,4'-Methylene bis(2-chloroaniline), Methyl vinyl ketone, Nitrapyrin, 5-Nitro-o-toluidine, Pentachloronaphthalene, Sulfometuron methyl, Temephos, 1,1,2,2-Tetrabromoethane, Tetramethyl succinonitrile, 2,4,6-Trinitrotoluene, Tin, and m-Xylene α,α' -diamine.
- Removal of separate listing and OELs for Cyclopentadiene. The substance would be regulated under the new listing Dicyclopentadiene, including Cyclopentadiene.

Silica (Crystalline)

Silica is a common mineral in the earth's crust. It is a major component of sand, rock and mineral ores and is a primary component in many construction materials. Silica exists in several forms, of which crystalline silica is of most concern. The best-known and most abundant type of crystalline silica is quartz. Less common, but also of importance, is cristobalite.

Inhalation is the most important route of occupational exposure to silica. Prolonged inhalation of fine silica dusts is linked to lung cancer and causes silicosis. Silicosis is an incurable lung disease condition characterized by the progressive scarring, thickening and hardening of the lung. It is marked by shortness of breath and impaired lung function that may give rise to complications resulting in death.

Exposure to silica may occur in many industries and occupations due to its wide and variable use. CAREX Canada estimates that 142,000 workers are occupationally exposed to silica in Ontario with most exposures occurring in construction. Job tasks that are typically associated with exposure to silica include grinding, sandblasting, crushing, sawing and mixing.

Other industries with high risk of exposure include underground mining, quarries, stoneworks and industries using silica in moulds for casting, as a filler and to make glass, ceramics, abrasives and cleaning agents. In recent years, an increase in use of natural stone in the manufacture of countertops and flooring has led to these industries being associated with a high risk of exposure.

Canada's Occupational Cancer Research Centre, in its 2017 report on the "Burden of Occupational Disease in Ontario", estimates that 200 lung cancers can be prevented each year in Ontario by reducing occupational exposures to silica and recommends that Ontario ensure the occupational exposure limits are up to date.

Following a review of Ontario's OELs for silica, and as an important step in further protecting Ontario workers from occupational exposures to silica, the ministry is proposing to adopt the current ACGIH limits. An overview of the changes proposed is set out below:

Proposed Changes to OELs for Silica in O. Reg. 490/09 and Reg. 833			
Current Ontario Listing	Current Time-Weighted Average Exposure Limit	Proposed Ontario Listing	Proposed Time-Weighted Average Exposure Limit
Silica, Crystalline		Silica, Crystalline	
Quartz /Tripoli [14808-60-7; 1317-95-9]	0.10 mg/m ³ (R)	α – Quartz [1317-95-9;14808-60-7] and Cristobalite [14464-46-1]	0.025 mg/m ³ (R)
Cristobalite [14464-46-1]	0.05 mg/m ³ (R)	-	-

Note: R means respirable fraction.

Hydrogen Sulfide

Hydrogen sulfide (also known as H₂S, sewer gas, swamp gas, stink damp, and sour damp) is a colourless gas known for its pungent "rotten egg" odour at low concentrations. It is extremely flammable and highly toxic.

Hydrogen sulfide is used or produced in several industries, such as

- Oil and gas refining
- Mining
- Tanning

- Pulp and paper processing

Hydrogen sulfide also occurs naturally in sewers, manure pits, well water, and oil and gas wells. Being heavier than air, it tends to accumulate at the bottom of poorly ventilated spaces such as manholes, sewers, and underground telephone vaults. Its presence makes work in confined spaces potentially very dangerous.

The health effects of hydrogen sulfide depend on how much of the gas a worker breathes and for how long. Health effects range from irritation to the eye and respiratory systems to unconsciousness and death. Exposure to the gas quickly deadens the sense of smell so workers may not be aware of its presence until too late.

To further protect Ontario workers from occupational exposures to hydrogen sulfide, the ministry is proposing to adopt the current ACGIH limits for this substance. An overview of the changes proposed is set out below:

Proposed Changes to the OELs for Hydrogen Sulfide in Regulation 833			
Current Time-Weighted Average Exposure Limit	Current Short-Term Exposure Limit	Proposed Time-Weighted Average Exposure Limit	Proposed Short-Term Exposure Limit
10 ppm	15 ppm	1 ppm	5 ppm

CSA Standard CAN/CSA-Z180.1, Compressed Breathing Air and Systems

The ministry is proposing to update and replace the references to CSA Standard CAN/CSA-Z180.1—*Compressed breathing air and systems* in Reg. 833, O. Reg. 490/09 and O. Reg. 278/05 with CAN/CSA-Z180.1:19, the latest version of the standard finalized in 2019.

Sections of the regulations affected include:

- Subsection 10(5) of Reg. 833
- Subsection 26.2(5) of O. Reg. 490/09; and
- Subsection 13(2) of O. Reg. 278/05.

Notice to Consultation Participants

Submissions and comments provided to the Ministry of Labour, Training and Skills Development (the Ministry) are part of a public consultation process to solicit views on and to facilitate the Ministry’s development of proposed new regulatory requirements related to

enhancing workplace protections from occupational disease and exposure to hazardous substances.

Comments Due Date: June 7, 2021

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Submissions and comments provided to the Ministry of Labour, Training and Skills Development (the Ministry) are part of a public consultation process to solicit views on and to facilitate the Ministry's development of proposed new regulatory requirements related to enhancing workplace protections from occupational disease and exposure to hazardous substances. This process may involve the Ministry publishing or posting to the internet your submissions, comments, or summaries of them. In addition, the Ministry may also disclose your submissions, comments, or summaries of them to third parties during and after the consultation period.

If you, as an individual, do not want personal information to be made public, you should not include your name or any other information by which you could be identified in the main body of the submission. As well, you should not include the names of other individuals or any other information by which other individuals could be identified in your submission. If you do provide any information which could disclose your identity or the identity of other individuals in the body of the submission, this information may be disclosed with published material or otherwise made available to the public. By submitting your comments, you are consenting to the use of your information, which may include personal information, by the Ministry.

Any name and contact information provided outside of the body of the submission (such as that which may be found in a cover letter, on the outside of an envelope, or in the header or signature of an email) will not be disclosed by the Ministry unless required by law. An individual who provides a submission or comments and indicates a professional affiliation with an organization will be considered a representative of that organization and his or her name and other identifying information in their professional capacity as the organization's representative may be disclosed.

Personal information collected during this consultation is under the authority of s. 70 of the *Occupational Health and Safety Act* and is in compliance with subsection 38(2) of the *Freedom of Information and Protection of Privacy Act*.

If you have any questions regarding the collection of personal information as a result of this consultation, you may contact the Ministry's Freedom of Information Office, 400 University Avenue, 10th Floor, Toronto, Ontario, M7A 1T7, or by calling 416-326-7786.