
Part 4 Chemical Hazards, Biological Hazards and Harmful Substances

General Requirements

Worker exposure to harmful substances

16(1) An employer must ensure that a worker's exposure to any substance listed in Schedule 1, Table 2 is kept as low as reasonably practicable, and does not exceed its occupational exposure limit.

(2) If no occupational exposure limit is established for a harmful substance present at a work site, an employer must ensure that all reasonably practicable steps are taken to keep each worker's exposure to that harmful substance as low as reasonably practicable.

(3) If a worker is exposed to a substance listed in Schedule 1, Table 2, at a concentration that exceeds its 8-hour occupational exposure limit but is less than its 15-minute occupational exposure limit, the employer must ensure that

- (a) each 15-minute period of exposure is followed by a period of at least 60 minutes during which the airborne concentration of the substance is at or below its 8-hour occupational exposure limit,
- (b) the worker cannot be subjected to more than 4 of the 15-minute periods of exposure in a continuous 24-hour period, and
- (c) the 8-hour occupational exposure limit cannot be exceeded.

(4) If no 15-minute occupational exposure limit or ceiling occupational exposure limit is listed for a substance in Schedule 1, Table 2, the employer must

- (a) comply with the 8-hour occupational exposure limit, and
- (b) ensure that a worker's exposure to that substance does not exceed
 - (i) 3 times the 8-hour occupational exposure limit for more than a total of 30 minutes during a continuous 24-hour period, and
 - (ii) 5 times the 8-hour occupational exposure limit at any time.

Exposure to multiple substances

17 An employer must take all reasonably practicable steps to ensure that, if a worker is exposed to more than one substance listed in Schedule 1, Table 2 during a single work shift and the toxicological effects have similar modes of toxic action, the value of D in the formula

$$D = \frac{C_1}{T_1} + \frac{C_2}{T_2} + \dots + \frac{C_n}{T_n}$$

does not exceed 1, where C_1, C_2, \dots, C_n refer to the airborne concentrations during exposure to contaminants 1, 2, ..., n , and T_1, T_2, \dots, T_n are their respective occupational exposure limit values expressed in the same units as C_n .

Exposure during shifts longer than 8 hours

18(1) Subject to subsection (3), if a worker is exposed to a substance listed in Schedule 1, Table 2 during a single work shift that is longer than 8 hours, the employer must ensure that equivalent protection from adverse health effects is achieved by adjusting the 8-hour exposure limit using the following formulas:

adjusted exposure limit = 8-hour occupational exposure limit \times daily reduction factor

where daily reduction factor = $\left\{ \frac{8}{h} \times \left(\frac{24-h}{16} \right) \right\}$, and

h = hours worked per day.

(2) Subsection (1) does not apply to a substance for which the number "3" appears in the "Substance Interaction" column of Schedule 1, Table 2.

(3) An employer may adjust the 8-hour exposure limit by another method that uses recognized scientific principles that is approved by a Director of Occupational Hygiene.

Review of exposure limits

- 19(1)** A person may apply to a Director of Occupational Hygiene to request a review of the occupational exposure limit of a substance.
- (2)** An application must be in writing and include reasons for the review, proposed changes and information that supports the request.
- (3)** On receipt of a request for a review of an occupational exposure limit, a Director of Occupational Hygiene may review the occupational exposure limit.

Airborne concentration measurements

- 20(1)** If a person measures the airborne concentration of a harmful substance for the purposes of complying with the occupational exposure limits as required by this Code, the person must make the measurement
- (a)** in accordance with the NIOSH Manual of Analytical Methods, 4th Edition (August 1994), published by the United States Department of Health and Human Services, as amended up to and including the 2nd supplement (January 15, 1998), or
 - (b)** using methods or procedures that are approved by a Director of Occupational Hygiene.
- (2)** Despite subsection (1), an employer may use a continuous reading direct-reading instrument to measure hydrogen sulphide concentration in air if the instrument is used, calibrated and maintained according to the manufacturer's specifications.
- (3)** If the person is counting fibres, the person must apply NIOSH Method 7400 and only to particles that meet the size criteria for fibres.
- (4)** An employer must record the results of the measurements and keep them for 3 years from the date on which the measurements were taken.

Potential worker exposure

- 21(1)** If a worker may be exposed to a harmful substance at a work site, an employer must identify the health hazards associated with the exposure and assess the worker's exposure.

- (2) The employer must ensure that a worker who may be exposed to a harmful substance at a work site
- (a) is informed of the health hazards associated with exposure to that substance,
 - (b) is informed of measurements made of airborne concentrations of harmful substances at the work site, and
 - (c) is trained in procedures developed by the employer to minimize the worker's exposure to harmful substances and understands the procedures.
- (3) A worker who is provided with training under subsection (2) must use the procedures appropriately and apply the training.

Worker overexposure

- 22(1)** If a worker may be exposed to an airborne concentration that is more than the occupational exposure limit of a substance, the employer must conduct measurements of the concentrations of that substance at the work site.
- (2) If a worker is exposed to more than the occupational exposure limit of a substance, the employer must immediately
- (a) identify the cause of the overexposure,
 - (b) protect the worker from any further exposure,
 - (c) control the situation so that no other workers are exposed to the substance at airborne concentrations that are more than the occupational exposure limit, and
 - (d) explain to the worker the nature and extent of the overexposure.
- (3) As soon as reasonably practicable, an employer must inform the joint work site health and safety committee, if there is one, in writing, that a worker has been exposed to more than the occupational exposure limit of a substance and the steps taken to control the overexposure.

Worker decontamination

- 23** If a worker may be contaminated by a harmful substance at a work site, the employer must provide the facilities, including showers, the worker needs to remove the contamination before the worker leaves the work site.

Emergency baths, showers, eye wash equipment

24 If a worker is present at a work site where chemicals harmful to the eyes or skin are used, the employer must ensure that the worker has immediate access at the work site to emergency baths, showers, eye wash equipment or other equipment appropriate for the potential level of exposure.

Prohibited activities

25(1) An employer must ensure that workers do not eat, drink or smoke tobacco in a part of a work site contaminated by a harmful substance.

(2) A worker must not eat, drink or smoke tobacco in a part of a work site contaminated by a harmful substance.

Codes of practice

26(1) An employer must have a code of practice governing the storage, handling, use and disposal of a substance listed in Schedule 1, Table 1 that is present at a work site

- (a) as pure substance in an amount exceeding 10 kilograms, or
- (b) in a mixture in which the amount of the substance is more than 10 kilograms and at a concentration of 0.1 percent by weight or more.

(2) The code of practice must include measures to be used to prevent the uncontrolled release of the substance and the procedures to be followed if there is an uncontrolled release.

Storage of harmful substances

27 An employer must ensure that a harmful substance used or stored at a work site

- (a) is clearly identified, or its container is clearly identified, and
- (b) is used and stored in such a way that the use or storage is not a hazard to workers.

General provisions for asbestos, silica, coal dust and lead

28 An employer must

- (a) minimize the release of asbestos, silica, coal dust and lead into the air as far as reasonably practicable,
- (b) keep the work site clear of unnecessary accumulations of asbestos, silica, coal dust and lead and waste materials containing any of these substances, and

- (c) ensure that the methods used to decontaminate the work area, workers, equipment and protective clothing prevent, as much as is reasonably practicable, the generation of airborne asbestos, silica, coal dust or lead.

Restricted area

- 29(1)** An employer must ensure that only a person authorized by the employer or by law to do so enters a restricted area.
- (2)** An employer must post signs that clearly indicate that
- (a) asbestos, silica, coal dust or lead are present in the area,
 - (b) only authorized persons may enter the area, and
 - (c) eating, drinking and smoking are prohibited in the area.
- (3)** Signs posted under subsection (2) must
- (a) be in a conspicuous location at the entrances to and on the periphery of each restricted area, as appropriate, and
 - (b) remain posted until the area is no longer a restricted area.
- (4)** An employer must
- (a) provide workers in a restricted area with protective clothing that protects other clothing worn by the worker from contamination by asbestos, silica, coal dust or lead,
 - (b) ensure that workers' street clothing is not contaminated by asbestos, silica, coal dust or lead, and
 - (c) ensure that a worker does not leave a restricted area until the worker has been decontaminated.
- (5)** Subsection (4) does not apply in an emergency if the health or safety of a worker requires the worker to leave a restricted area without being decontaminated.

Protective clothing used in restricted areas containing asbestos or lead

- 30(1)** If clothing used in a restricted area containing asbestos or lead is reused and not discarded, the employer must have the clothing laundered in the appropriate manner and at appropriate intervals to ensure
- (a) the clothing is decontaminated, and
 - (b) there is no cross-contamination of other clothing by asbestos or lead.

- (2) The employer must ensure that clothing contaminated with asbestos or lead that is to be laundered before being reused is stored and transported in sealed containers.
- (3) Containers used in subsection (2) must be clearly labelled
 - (a) to identify the contents,
 - (b) to indicate that the contents are a hazard, and
 - (c) to warn workers that dust from the contents should not be inhaled.

Release of asbestos

31(1) If it is determined that asbestos fibres may be released in a building, the building is in an unsafe condition.

- (2) The employer must take all necessary steps to correct the unsafe condition.

Prohibitions related to asbestos

32(1) A person must not use materials containing crocidolite asbestos in an existing or a new building.

- (2) A person must not apply materials containing asbestos by spraying them.

Asbestos in air distribution systems

33 A person must not use asbestos in an air distribution system or equipment in a form in which, or a location where, asbestos fibres could enter the air supply or return air systems.

Asbestos in building to be demolished

34 If a building is to be demolished, the employer must ensure that materials with the potential to release asbestos fibres are removed first.

Encapsulation, enclosure or removal of asbestos

35 If a building is being altered or renovated, the employer must ensure that materials in the area of the alterations or renovations that could release asbestos fibres are encapsulated, enclosed or removed.

Notification of a project

36(1) An employer who is responsible for removing or abating asbestos or for demolishing or renovating a building or equipment containing asbestos must notify a Director of Inspection of the activity at least 72 hours before beginning the activities that may release asbestos fibres.

(2) A person must not remove or abate asbestos or demolish or renovate a building or equipment containing asbestos if a Director of Inspection has not been notified in accordance with subsection (1).

Asbestos worker course

37(1) An employer must ensure that a worker who works with asbestos receives the training necessary for the worker to perform the work safely.

(2) An employer must ensure that a worker who enters a restricted area that is designated as a restricted area due to the presence of asbestos

- (a) has successfully completed a course of instruction approved by a Director of Occupational Hygiene, and
- (b) has in the worker's possession the original valid certificate of completion of the course issued to the worker.

Containment and labelling of asbestos waste

38(1) An employer must ensure that asbestos waste is stored, transported and disposed of in sealed containers that are impervious to asbestos and asbestos waste.

(2) An employer must ensure that a container of an asbestos product and asbestos waste is clearly labelled

- (a) to identify the contents as an asbestos product and carcinogenic, and
- (b) to warn handlers that dust from the contents should not be inhaled.

Use of crystalline silica in abrasive blasting

39(1) An employer must ensure that crystalline silica is not used at a work site for abrasive blasting.

(2) Despite subsection (1), if there are sound technical or economic reasons for using crystalline silica, or a less harmful substance is not available, an employer may authorize workers to use crystalline silica at a work site for abrasive blasting.

Health assessments for workers exposed to asbestos, silica or coal dust

- 40(1)** This section applies to workers exposed to asbestos, silica or coal dust.
- (2)** A health assessment of the worker must include the following:
- (a) the identity of the worker and the employer;
 - (b) the date of the medical examination, chest x-ray and spirogram;
 - (c) a 35 centimetres by 43 centimetres postero-anterior view chest x-ray, including a radiologist's report;
 - (d) a spirogram, conducted by a pulmonary function technician, including determinations of forced expiratory volume in the first second and forced vital capacity;
 - (e) a history covering
 - (i) occupational exposures to asbestos, silica, coal dust, or other industrial dusts and carcinogens,
 - (ii) significant exposures to asbestos, silica, coal dust, other dust and carcinogens during non work-related activities,
 - (iii) significant symptoms that may indicate silicosis, pneumoconiosis, asbestosis or cancer,
 - (iv) past and current medical diagnoses of respiratory disease, and
 - (v) the worker's smoking history,
 - (f) a written interpretation and explanation of the results by a physician of the assessment with particular reference to the worker's exposure to airborne substances.
- (3)** The physician must give the written interpretation and explanation of the results of the health assessment to the worker not more than 60 days after the tests are completed.
- (4)** The physician must ensure that the records of the health assessment are kept for not less than 30 years.
- (5)** The person with custody of the health assessment record must ensure that no person, other than the worker or health professional who conducts the health assessment, the staff supervised by the health professional or another person authorized by law to have access, has access to the exposed worker's health assessment unless
- (a) the record is in a form that does not identify the worker, or
 - (b) the worker gives written permission for access by another person.
- (6)** An employer must ensure that a worker undergoes a health assessment
- (a) not more than 30 calendar days after the worker becomes an exposed worker, and
 - (b) every 2 years after the first health assessment.

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- (7) If an exposed worker received a health assessment from a previous employer within the immediately preceding 2 years, the worker must inform the present employer of the date or approximate date of that health assessment at the earliest possible time.
- (8) An employer must ensure at all times that an exposed worker has received a health assessment within the immediately preceding 2 years.
- (9) Despite subsections (7) and (8), exposed workers may refuse to undergo part or all of a health assessment by giving the employer a written statement refusing it.
- (10) An employer must not coerce, threaten or force a worker into refusing part or all of a health assessment.
- (11) An employer must pay the cost of the health assessment, medical interpretation and explanation required by this section.
- (12) An employer must ensure that, if it is reasonably practicable, a health assessment is performed during normal hours of work.
- (13) An employer must not make deduction from the worker's wages, salary or other remuneration or benefits for the time an exposed worker
- (a) undergoes a health assessment, or
 - (b) travels to or from a health assessment.

Lead exposure control plan

- 41(1)** An employer must develop an exposure control plan for lead if
- (a) a worker at the work site may be exposed to airborne lead in excess of its occupational exposure limit for more than 30 days in a year, or
 - (b) a worker's exposure to lead at the work site could result in an elevated body burden of lead through any route of entry.
- (2) The exposure control plan must include at least the following:
- (a) a statement of purpose and the responsibilities of individuals;
 - (b) methods of hazard identification, assessment and control;
 - (c) worker education and training;
 - (d) safe work practices if these are required by the hazard assessment under this Code;
 - (e) descriptions of personal and work site hygiene practices and decontamination practices;
 - (f) processes of health monitoring, including biological testing;

- (g) methods of documentation and record keeping;
- (h) procedures for maintenance of the plan, including annual reviews and updating.

(3) A worker must follow the exposure control plan and practice the personal and work site hygiene practices established by the employer to minimize lead exposure at the work site.

Lead — air monitoring

42 If a worker may be exposed to lead in harmful amounts at a work site, an employer must ensure that air monitoring and surface testing for lead is regularly conducted to confirm that the controls in place are effective.

Medical monitoring for lead

43(1) An employer must ensure blood lead level testing is available to a worker if the worker at a work site could reasonably be expected to have an elevated body burden of lead.

(2) An employer must ensure that a worker exposed to lead is informed of the availability of the blood lead test.

(3) The employer must pay the cost of a blood level test.

(4) An exposed worker may refuse to undergo a blood level test by giving the employer a written statement refusing it.

(5) An employer must not coerce, threaten or force a worker into refusing part or all of the test.