

## Occupational Health and Safety Act

### R.R.O. 1990, REGULATION 843 DESIGNATED SUBSTANCE — LEAD

**Consolidation Period:** From April 21, 2004 to the [e-Laws currency date](#).

Last amendment: O.Reg. 109/04.

*This is the English version of a bilingual regulation.*

1. In this Regulation,

“joint health and safety committee” includes a joint health and safety committee established under section 9 of the Act, a committee of like nature and the workers or their representatives who participate in an arrangement, program or system conforming to subsection 9 (4) of the Act; (“comité mixte sur la santé et la sécurité”)

“lead” means elemental lead, inorganic compounds of lead and organic compounds of lead. (“plomb”) R.R.O. 1990, Reg. 843, s. 1.

2. Lead is prescribed as a designated substance. R.R.O. 1990, Reg. 843, s. 2.

3. (1) This Regulation applies to every employer and worker at a workplace where lead is present, produced, processed, used, handled or stored and at which the worker is likely to inhale, ingest or absorb lead. R.R.O. 1990, Reg. 843, s. 3 (1).

(2) A person who is an employer to whom this Regulation applies and at whose workplace construction is being carried out shall comply with sections 4 and 5 with respect to every worker who is not an employee of the employer and who,

(a) works on the construction, even if the work is performed under a contract with another person; or

(b) is authorized or permitted to be in the workplace. R.R.O. 1990, Reg. 843, s. 3 (2).

(3) Subject to subsection (2), this Regulation does not apply to a constructor or to an employer on a construction project in respect of those workers who work at or on the project. R.R.O. 1990, Reg. 843, s. 3 (3).

4. (1) Every employer shall take all necessary measures and procedures by means of engineering controls, work practices and hygiene practices and facilities to ensure that the time-weighted average exposure of a worker to airborne lead, except tetraethyl lead, shall not exceed 0.05 milligrams lead per cubic metre of air, and in the case of exposure to tetraethyl lead 0.10 milligrams lead per cubic metre of air. R.R.O. 1990, Reg. 843, s. 4 (1); O. Reg. 389/00, s. 1 (1).

(2) In complying with subsection (1), the employer shall ensure that the maximum concentration of exposure to airborne tetraethyl lead shall not exceed 0.30 milligrams lead per cubic metre of air and the exposure of a worker to such maximum concentration,

(a) shall not exceed fifteen minutes at any one time;

(b) shall not occur more than four times in a work day; and

(c) shall not occur until at least sixty minutes have elapsed from the time of the last previous exposure to such concentration. R.R.O. 1990, Reg. 843, s. 4 (2); O. Reg. 389/00, s. 1 (2).

(3) Subject to section 5, every employer shall comply with subsections (1) and (2) without requiring a worker to wear and use respiratory equipment. R.R.O. 1990, Reg. 843, s. 4 (3).

(4) The time-weighted average exposure of a worker to airborne lead shall be calculated in accordance with the Schedule and the result of the calculation of the exposure may be certified by an inspector. R.R.O. 1990, Reg. 843, s. 4 (4).

(5) Every worker shall work in compliance with the work practices and hygiene practices in accordance with the provisions of the lead control program. R.R.O. 1990, Reg. 843, s. 4 (5).

(6) On a prosecution for a failure to comply with subsection (1), it shall be a defence for an employer to prove that the employer has complied with subsection (1) and that a breach of subsection (1) occurred solely because a worker failed to work in compliance with the work practices and hygiene practices in accordance with the provisions of the lead control program and the employer has taken every precaution reasonable in the circumstances to require the worker to do so. R.R.O. 1990, Reg. 843, s. 4 (6).

5. (1) Where the strict duty imposed by subsection 4 (1) cannot be complied with because,

(a) an emergency exists; or

(b) the measures and procedures necessary to control the exposure of a worker to airborne lead,

- (i) do not exist or are unavailable,
- (ii) are not reasonable or practical for the length of time or frequency of exposure or the nature of the process, operation or work, or
- (iii) are not effective because of a temporary breakdown of equipment,

the employer shall provide a worker with respiratory equipment which shall be used by the worker. R.R.O. 1990, Reg. 843, s. 5 (1).

(2) Where respiratory equipment is provided by an employer and used by a worker, the respiratory equipment shall be appropriate in the circumstances for the type and the concentration of airborne lead and shall meet or exceed the requirements set out in the *Code for Respiratory Equipment for Lead* dated June 30, 2000, and issued by the Ministry. R.R.O. 1990, Reg. 843, s. 5 (2); O. Reg. 389/00, s. 2.

(3) The employer shall provide training and instruction to a worker in the proper care and use of respiratory equipment provided by the employer. R.R.O. 1990, Reg. 843, s. 5 (3).

**6.** (1) Every employer to whom this Regulation applies shall cause an assessment to be made in writing of the exposure or likelihood of exposure in a workplace of a worker to the inhalation, ingestion or absorption of lead. R.R.O. 1990, Reg. 843, s. 6 (1).

(2) In causing the assessment to be made, the employer shall consider and take into account such matters as,

- (a) the methods and procedures used or to be used in the processing, use, handling or storage of lead;
- (b) the extent and potential extent of the exposure of a worker to the inhalation, ingestion or absorption of lead; and
- (c) the measures and procedures necessary to control such exposure by means of engineering controls, work practices and hygiene practices and facilities. R.R.O. 1990, Reg. 843, s. 6 (2).

(3) In causing the assessment to be made, the employer shall consult thereon with the joint health and safety committee and the committee may make recommendations with respect to the assessment. R.R.O. 1990, Reg. 843, s. 6 (3).

(4) A copy of the assessment made by an employer shall be given by the employer to each member of the joint health and safety committee. R.R.O. 1990, Reg. 843, s. 6 (4).

**7.** (1) Where the assessment discloses or would, if made in conformity with section 6, disclose that a worker is likely to inhale, ingest or absorb lead and that the health of the worker may be affected thereby, the employer shall develop, establish, put into effect and maintain measures and procedures to control the exposure of the worker to lead and shall incorporate the same into a lead control program. R.R.O. 1990, Reg. 843, s. 7 (1).

(2) The lead control program shall include provisions for,

- (a) engineering controls, work practices and hygiene practices and facilities to control the exposure of a worker to lead;
- (b) methods and procedures to monitor the concentrations of airborne lead in the workplace and the exposure of a worker thereto;
- (c) personal records of the exposure of a worker to lead at the workplace to be maintained by the employer;
- (d) medical examinations and clinical tests of a worker; and
- (e) records of medical examinations and clinical tests of a worker to be maintained by a physician who has examined the worker or under whose direction the clinical tests have been performed. R.R.O. 1990, Reg. 843, s. 7 (2).

(3) In developing the measures and procedures mentioned in subsection (1) and the lead control program, the employer shall consult with the joint health and safety committee and the committee may make recommendations with respect to the same. R.R.O. 1990, Reg. 843, s. 7 (3).

**8.** Where a change is made in a process involving lead, or in the methods and procedures in the use, handling or storage of lead and the change could result in a significant difference in the exposure of a worker to the inhalation, ingestion or absorption of lead, the employer shall cause a further assessment to be made forthwith and the provisions of sections 6 and 7 apply to the further assessment. R.R.O. 1990, Reg. 843, s. 8.

**9.** (1) Where disputes arise between an employer and a joint health and safety committee as to an assessment required under section 6 or 8 or as to the measures and procedures mentioned in subsection 7 (1) or the lead control program or its provisions required under section 7 or 8, the employer, a member of the joint health and safety committee or the committee may notify an inspector thereof who shall investigate and give a decision in writing to the employer, the member or committee. R.R.O. 1990, Reg. 843, s. 9 (1).

(2) Nothing in subsection (1) applies so as to affect the power of an inspector to issue an order for a contravention of this Regulation. R.R.O. 1990, Reg. 843, s. 9 (2).

**10.** (1) A copy of the lead control program put into effect by the employer shall be given by the employer to each member of the joint health and safety committee and the employer shall acquaint every worker affected by the lead control program with its provisions. R.R.O. 1990, Reg. 843, s. 10 (1).

(2) A copy of the lead control program put into effect by the employer shall be made available by the employer in English and in the majority language of the workplace. R.R.O. 1990, Reg. 843, s. 10 (2).

**11.** The procedures for monitoring, sampling and determining the concentrations of airborne lead in the atmosphere of a workplace and a worker's exposure to airborne lead shall be in accordance with standard methods for workplace air sampling and analysis. O. Reg. 389/00, s. 3.

**12.** The results of monitoring the concentrations of airborne lead in the workplace and the exposure of a worker thereto as provided by the lead control program shall be,

- (a) posted forthwith by the employer as soon as the results are available in a conspicuous place or places at the workplace where they are most likely to come to the attention of the workers affected thereby for a period of at least fourteen days;
- (b) furnished to the joint health and safety committee; and
- (c) kept by the employer for a period of at least five years. R.R.O. 1990, Reg. 843, s. 12.

**13.** (1) A worker shall, at the expense of the employer, undergo the medical examinations and clinical tests required under the lead control program. R.R.O. 1990, Reg. 843, s. 13 (1).

(2) The medical examinations and clinical tests required under the lead control program shall make provisions for,

- (a) pre-employment and pre-placement medical examinations to include,
  - (i) a medical history,
  - (ii) a physical examination, and
  - (iii) clinical tests including analysis of blood or urine or both as required by the examining physician; and
- (b) periodic medical examinations and clinical tests consisting of the items prescribed by clause (a). R.R.O. 1990, Reg. 843, s. 13 (2).

(3) The concentration of lead in a worker's blood or urine shall be determined in accordance with standard methods for biological monitoring. O. Reg. 389/00, s. 4.

(4) The medical history, physical examination and clinical tests shall meet the provisions of the *Code for Medical Surveillance for Lead* dated the 28th day of May, 1981 and issued by the Ministry. R.R.O. 1990, Reg. 843, s. 13 (4).

**14.** (1) The records of the exposures of each worker to airborne lead at the workplace to be maintained as provided by the lead control program shall identify the worker, including the worker's date of birth, the worker's jobs or occupations at the workplace, the results of monitoring for exposure to airborne lead in the worker's work area and the use by the worker of respiratory equipment and its type. R.R.O. 1990, Reg. 843, s. 14 (1).

(2) The employer shall provide a copy of the records of the exposures of the worker to airborne lead as provided by the lead control program to the physician who examines the worker and under whose supervision the clinical tests of the worker are performed. R.R.O. 1990, Reg. 843, s. 14 (2).

**15.** (1) The records of medical examinations and clinical tests of a worker obtained and made under this Regulation and of the exposures of the worker to airborne lead furnished by the employer under subsection 14 (2) shall be kept in a secure place by the physician who has conducted the examinations and tests or under whose supervision the examinations and tests have been made for the longer of,

- (a) the period of forty years from the time such records were first made;
- (b) the period of twenty years from the time the last of such records were made. R.R.O. 1990, Reg. 843, s. 15 (1).

(2) Where the physician is no longer able or willing to keep the records, the records shall be forwarded to the Provincial Physician, Ministry of Labour, or to a physician designated by the Provincial Physician and the provisions of subsection (1) shall, with necessary modifications, apply thereto. R.R.O. 1990, Reg. 843, s. 15 (2); O. Reg. 519/92, s. 1.

**16.** (1) The physician conducting the physical examination or clinical tests or under whose supervision the examination or tests are made shall advise the employer, who shall act thereon, and the worker whether the worker is fit or because of a condition resulting from the inhalation, ingestion or absorption of lead is fit with limitations or unfit, without giving or disclosing to the employer the records or results of the examination or tests, and in advising that the worker is fit with limitations or unfit, the physician shall be governed by the provisions of the *Code for Medical Surveillance for Lead* referred to in subsection 13 (4). R.R.O. 1990, Reg. 843, s. 16 (1).

(2) Where a worker is removed from exposure to lead because a physical examination or clinical test discloses that the worker may have or has a condition resulting from the inhalation, ingestion or absorption of lead and suffers a loss of earnings occasioned thereby, the worker is entitled to compensation for the loss in the manner and to the extent provided by the *Workplace Safety and Insurance Act, 1997*. R.R.O. 1990, Reg. 843, s. 16 (2); O. Reg. 109/04, s. 1.

(3) Upon receiving the report of the analysis of a sample of blood or urine taken under the lead control program, the physician shall advise in writing upon a confidential basis the joint health and safety committee of the concentration of lead

in the blood or urine of a worker and in giving such advice shall indicate his or her opinion as to the interpretation to be placed thereon. R.R.O. 1990, Reg. 843, s. 16 (3).

(4) Copies of the exposure records and the records and results of physical examinations and clinical tests of a worker shall be given by the physician conducting the examinations or tests,

- (a) to the worker or the worker's physician upon the request in writing of the worker; and
- (b) in the case of a deceased worker, to the nearest next of kin or personal representative of the worker, upon the request in writing of such next of kin or personal representative,

and any authorization of another person by the worker or the worker's nearest next of kin or personal representative is of no effect. R.R.O. 1990, Reg. 843, s. 16 (4).

(5) Where the physician advises the employer that a worker, because of a condition resulting from exposure to lead, is fit with limitations or is unfit, the physician shall forthwith communicate such advice to the Provincial Physician, Ministry of Labour. R.R.O. 1990, Reg. 843, s. 16 (5); O. Reg. 519/92, s. 2.

17. For the purposes of this Regulation, the methods and procedures that may be used or adopted may vary from the Codes issued by the Ministry if the protection afforded thereby or the factors of accuracy and precision used or adopted are equal to or exceed the protection or the factors of accuracy and precision in the Codes issued by the Ministry. R.R.O. 1990, Reg. 843, s. 17.

### SCHEDULE

The time-weighted average exposure of a worker to airborne lead shall be calculated for a forty-hour week and an eight-hour day as follows:

1. The average concentrations of lead to which a worker is exposed shall be determined from analyses of air samples representative of the exposure of the worker to lead during work operations in accordance with standard methods for workplace air sampling and analysis.
2. The results of the analyses are the concentrations expressed as elemental lead in milligrams per cubic metre of air.
3. The concentrations shall be multiplied by the time in hours to which the worker is taken to be exposed to such concentrations.
4. The weekly exposure shall be calculated as follows:

$$C_1T_1 + C_2T_2 + \dots + C_nT_n = \text{cumulative weekly exposure}$$

where,

$C_1$  is the concentration found in an air sample, and

$T_1$  is the total time in hours to which the worker is taken to be exposed to concentration  $C_1$  in a week.

5. The weekly time-weighted average exposure shall be calculated by dividing the cumulative weekly exposure by 40.
6. The daily exposure shall be calculated as follows:

$$C_1T_1 + C_2T_2 + \dots + C_nT_n = \text{cumulative daily exposure}$$

where,

$C_1$  is the concentration found in an air sample, and

$T_1$  is the total time in hours to which the worker is taken to be exposed to concentration  $C_1$  in a day.

7. The daily time-weighted average exposure shall be calculated by dividing the cumulative daily exposure by 8.

R.R.O. 1990, Reg. 843, Sched; O. Reg. 389/00, s. 5.

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