



THE UNIVERSITY OF WESTERN ONTARIO
OCCUPATIONAL HEALTH AND SAFETY

DESIGNATED SUBSTANCES PROGRAM

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Introduction

Designated Substances are those substances designated as hazardous by the Ministry of Labour under the Occupational Health and Safety Act, Section 70 (2) 23.

The Act defines a designated substance as:

A biological, chemical or physical agent or combination thereof prescribed as a designated substance to which the exposure of a worker is prohibited, regulated, restricted, limited or controlled.

A regulation specifies procedures for control of the substance. The following substances have been designated:

- Reg. 835 Acrylonitrile (1984)
- Reg. 836 Arsenic (1986)
- Reg. 837 Asbestos (1982)
- Reg. 838 Asbestos - Construction, Building & Repair (1985)
- Reg. 839 Benzene (1984)
- Reg. 840 Coke Oven Emissions (1982)
- Reg. 841 Ethylene Oxide (1987)
- Reg. 842 Isocyanates (1983)
- Reg. 843 Lead (1981)
- Reg. 844 Mercury (1982)
- Reg. 845 Silica (1983)
- Reg. 846 Vinyl Chloride (1982)

When a designated substance is present in the workplace, the Occupational Health and Safety Act requires the employer to review the work methods and assess the likelihood of worker exposure. When there is likelihood of worker exposure, a control program must be instituted that includes engineering controls, work practices, hygiene practices, training record keeping and medical surveillance, if applicable.

At the University of Western Ontario (UWO), a comprehensive Asbestos Control Program has been in place for many years. In order to assess the amount and range of other Designated Substances present on campus, a survey is sent annually to all Departmental Chairs and Budget Unit Heads along with a Designated Substances Inventory form requiring identification of the designated substance, location and quantity. These are to be filled out by each person using the substance and returned to Occupational Health and Safety (OHS.)

As Asbestos, Benzene, Lead, Mercury and Silica are the only Designated Substances indicated as being currently present at UWO, a program has been written for these five initially. As the list of substances increases, the program will be expanded as necessary.

Assessment

The designated substance regulations require that an assessment be conducted to determine the extent to which workers are exposed to the substance. If such assessments are to be thorough and accurate, it is important that they be organized in a step-by-step manner, as outlined in this document.

In conducting the assessment the procedures used in handling the substance, the actual and potential exposure of workers to the substance and the procedures necessary to control such exposure are taken into account. Any data that have already been gathered on air quality, worker exposure and existing control measures is also included. The core of the assessment consists of information obtained from an inspection of the workplace to evaluate, first-hand, the nature of worker exposure to the substance. This inspection may be supplemented by air sampling where necessary:

OHS must be consulted when planning the assessment or evaluating the data. Other experts such as occupational hygienists, engineers, designers, and Workplace Health may also be consulted.

OHS will communicate all aspects of the Designated Substances Program with the Joint Occupational Health and Safety Committee (JHSC).

Steps to be considered in determining the need for implementing a Designated Substance Program.

1. The users must familiarise themselves with the substance used in their workplace and identify the materials handled in the workplace that contain the designated substance. The quantities of the substance used, the manner in which it is handled and the physical form (e.g. solid, liquid, dust, fume, vapour, etc.) in which it is present is to be recorded.
2. The users must familiarise themselves with existing data on processes and control measures currently used in the University. The following information, is to be recorded in the assessment if available:
 - a. Engineering controls:
 - i. Types of ventilation systems used;
 - ii. Location of local exhaust ventilation hoods;
 - iii. Measures taken to isolate or physically enclose the machine or process
 - b. Work practices regarding handling, use and storage of materials
 - c. Hygiene practices
 - d. Housekeeping procedures
 - e. Use of personal protective equipment.
 - f. Contingency plans for spills or equipment breakdowns
 - g. Medical surveillance programs; completion of Workplace Hazard Communication Form

3. Supervisors must provide information and training on the hazards of the substances, precautions required for its handling, storage, disposal, personal hygiene practices and use of personal protective equipment to their workers.
4. The workplace is to be inspected, observing every step in the process to determine the potential for exposure of workers to the substance. Potential hazards involved in the storage and transportation of the material should be considered. Areas of consideration include:
 - a. Sources of Contamination
 - b. Possibility of Worker Exposure
 - c. Engineering Controls
 - d. Housekeeping Measures
 - e. Emergency Equipment
 - i. Respiratory equipment
 - ii. Protective clothing
 - iii. Emergency clean-up equipment
 - iv. Showers, eyewashes
 - f. Worker feedback

Review and Analysis

The data is to be reviewed to determine the actual and potential exposure of workers to the substance, the adequacy of existing control measures and any further measures necessary to control exposures. The analysis will include an evaluation of:

- a. potential sources of worker exposure to the substance;
- b. present hygiene practices and facilities;
- c. ventilation;
- d. other engineering controls;
- e. protective equipment procedures;
- f. work practices, including provisions for emergencies;
- g. training programs;
- h. administrative controls;
- i. medical surveillance programs and

An assessment report including a summary of the information gathered and the analysis of these data must state whether there is actual or potential exposure of workers to the substance and whether their health may be affected. The conclusions of the assessment must indicate whether or not a control program is necessary. One of four possible conclusions may be reached:

1. Although the substance is present in the workplace, there is no necessity for a control program since it is not possible that the health of workers could be affected by exposure to the substance.
2. Although workers may be potentially exposed to the substance and there are some engineering controls, e.g. exhaust ventilation, there is no need for a control program since the health of a worker is not likely to be affected because the risk to health would be minimal even if the engineering controls

failed.

3. Existing control measures provide adequate worker protection; however, if these controls should fail or should not be maintained properly, the health of workers may be affected. If this conclusion is reached, then a control program must be developed that incorporates existing control measures and other mandatory provisions as required by the regulation.
4. Workers are exposed to the substance in a manner that can affect their health, and further control measures are needed to provide sufficient protection. If this conclusion is reached, then a control program must be developed that establishes further control measures to protect the health of workers.

The Assessment report will include one of the above conclusions. In the case of conclusion 1 or 2, the assessment will be re-evaluated if there is a change in the use of the substance that may result in the need for a control program. In the case of conclusion 3 or 4 where a control program is required, OHS will work with the department involved to ensure all the required elements are in place.