





Risk Management Manual Program

Complete Program Title: Designated Substances Control Program	Risk Management Manual (RMM) Number: 500
Approved by:  <hr/> Vice-President, Operations and Finance  <hr/> President and Vice-Chancellor	Date of Most Recent Approval: December 2022
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DISCLAIMER: <i>If there is a discrepancy between this electronic program and the written copy held by the program owner, the written copy prevails.</i>	

1 PURPOSE

1.1 To outline the program for the responsible management of Designated Substances that protects individuals, the natural environment and McMaster University property.

To ensure compliance with the Occupational Health and Safety Act and the Ontario Regulation 490/09 – Designated Substances.

Application includes:

- Acrylonitrile
- Arsenic
- Asbestos
- Benzene
- Coke oven emissions
- Ethylene oxide
- Isocyanates
- Lead
- Mercury
- Silica
- Vinyl chloride

2 SCOPE

All individuals and contractors who process, use, handle or store designated substances in McMaster University owned or leased facilities, areas in host institutions occupied by McMaster University staff and students or used as part of field trip and any place containing a designated substance.

3 Related Documents

- 3.1 Occupational Health and Safety Act RSO 1990
- 3.2 Ontario Regulation 278/05, Designated Substance – Asbestos on Construction Projects
- 3.3 McMaster University Workplace and Environmental Health and Safety Policy, RMM#100
- 3.4 McMaster University Asbestos Management Control Program, RMM#401
- 3.5 McMaster University Health and Safety Training Program, RMM#300
- 3.6 McMaster University Hazardous Materials Management Systems including WHMIS Program, RMM#501
- 3.7 McMaster University Hazardous Waste Management Program, RMM#502
- 3.8 McMaster University Laboratory Safety Handbook,

4 DEFINITIONS

- 4.1 **Designated Substance** – A biological, chemical or physical agent, or combination thereof, to which the exposure of a worker is prohibited, regulated, restricted, limited or controlled by a designated substance regulation.
- 4.2 **Assessment** – an evaluation of the workers' exposure to a designated substance that must take into account:
 - (a) the methods and procedures employed in the processing, use, handling or storage of the substance;
 - (b) worker's actual and potential exposure to the substance; and,
 - (c) the measures and procedures required to control the exposure.

4.3 **Control Program** – is a program designed to control exposure to a Designated Substance that may specify some or all of the following:

- (a) engineering controls, work practices and hygiene practices and facilities to control exposures;
- (b) monitoring of concentrations in the air and individual exposures;
- (c) medical examinations and clinical tests for workers; and,
- (d) training programs for supervisors and workers.

To determine which of these elements must be incorporated in a given control program employers must consult the O. Reg. 490/09 for the specific designated substance.

4.4 **Monitoring** – air-emission and medical testing that are prescribed in the Designated Substance regulations.

4.5 **Worker** – means any of the following, but does not include an inmate of a correctional institution or like institution or facility who participates inside the institution or facility in a work project or rehabilitation program:

1. A person who performs work or supplies services for monetary compensation.
2. A secondary school student who performs or supplies services for no monetary compensation under a work experience program authorized by the school board that operates the school in which the student is enrolled.
3. A person who performs work or supplies services for no monetary compensation under a program approved by a college or applied arts and technology, university or other post-secondary institution.
4. Such other persons as may be prescribed who perform work or supply services to an employer for no monetary compensation (“travailleur”).

4.6 **Supervisor** – Person who has charge of a workplace or authority over a worker.

4.7 **Acronyms:**

EOHSS - Environmental & Occupational Health Support Services

CJHSC - Central Joint Health and Safety Committee

JHSC- Joint Health and Safety Committee

PPE – Personal Protective Equipment

SDS – Safety Data Sheet

MECP – Ministry of Environment, Conservation and Parks, Conservation and Parks

TWA – Time Weighted Average

FHSSO– Faculty of Health Sciences Safety Office**5 RESPONSIBILITIES****5.1 Role of Senior Management: (Vice President Administration)**

Senior Managers shall:

- provide the support and resources necessary to implement and maintain the Designated Substance Program within their area of responsibility; and,
- ensure designated substances are identified and assessed within their area of responsibility.

5.2 Role of Supervisors (Academic and Administrative):

Supervisors shall:

- be familiar with and have access to the current list of designated substances and the regulation;
- conduct an audit to identify any designated substances used, handled, stored or present in the workplace;
- whenever possible substitute a less hazardous product for any designated substance used in the workplace;
- maintain an inventory of all designated substances used, stored or present in the workplace;
- conduct an assessment of any designated substance used, handled, stored or present in the workplace using the specific designated substance regulation as a guide (See Assessment Forms Appendix A);
- consult with the appropriate safety office prior to making the assessment if necessary;
- inform the JHSC and safety office of all designated substances in the workplace;
- document any control program required for a designated substance and review program with the appropriate safety office and the JHSC;
- ensure that all individuals required to use, handle, or store designated substances, or work where designated substances are present, have access to the regulation and are trained in all aspects of any control program implemented;
- ensure that designated substances are stored safely and disposed of in the approved manner as described in the Hazardous Waste Management Program RMM#502 and in accordance with MECP disposal standards;
- ensure that all individuals supervised who are required to handle hazardous materials, including designated substances, have received WHMIS training and

are familiar with and have access to the Hazardous Materials Management Systems WHMIS Program (RMM # 501);

- ensure that all individuals supervised who handle hazardous material, including designated substances, are trained in the safe handling, separation, storage, spill and disposal procedures for the specific hazardous materials used in the workplace;
- provide spill kits having a capacity to clean up incidental spills and provide specific training in their use. Large spills may need to be cleaned up using an external contractor if cannot be contained safely internally using available PPE;
- provide personal protective equipment as required to protect individuals working with hazardous materials (e.g. gloves, face shields, goggles, respirators, etc);
- ensure that all individuals required to use protective equipment are trained in the safe use and care of such equipment;
- ensure that engineered systems to control exposures (e.g. fume hoods and bio-containment cabinets) are maintained and tested; and,
- resubmit assessment to JHSC if there are changes in protocol.

5.3 **Role of Workers:**

Workers shall:

- receive WHMIS training;
- receive specific training in the requirements of the Hazardous Materials Management Systems including WHMIS Program (RMM # 501);
- receive specific written training related to the appropriate designated substance regulation;
- receive training in the requirements of any control program implemented for a designated substance used, stored or handled by them in the workplace;
- participate in any medical monitoring program, if required by the designated substance regulations; and,
- follow all procedures for the safe handling, use, storage, separation, clean up of spills and disposal of the designated substance.

5.4 **Role of Joint Health and Safety Committee:**

The CJHSC shall:

- review and make comment on the Designated Substance Control Program on a scheduled basis.

The JHSC shall:

- review designated substance assessments, and;
- receive and review Designated Substance Control Program as required

Role of Environmental and Occupational Health Support Services and Faculty of Health Sciences Safety Office:

The EOHSS/FHSSO shall:

- develop programs for the safe management of hazardous materials including designated substances incorporating CJHSC recommendations;
- provide the oversight and audit functions for the safe management of designated substances used or stored as identified by McMaster University staff at any location where required;
- provide assistance in conducting designated substance assessments in the workplace if required;
- develop designated substance control programs in consultation with user groups and the JHSC's (e.g. Asbestos Management Control Program);
- provide advice as required for the safe use, storage and disposal of designated substances; and,
- provide air monitoring results to the JHSC's.

6 PROCEDURES

6.1.1 Assessment

6.1.2 An assessment shall consider all possible means of substituting the designated substance with a less hazardous product.

6.1.3 An assessment must be made in all areas where designated substances are used, handled, stored or present, to ensure that the TWA of persons working in the area does not exceed the limits specified in the designated substance regulation.

6.1.4 The supervisor will consult with the appropriate safety office prior to conducting the assessment and JHSC if needed.

6.1.5 The assessment shall be documented (See Appendix A) and take into account:

- a) the methods and procedures employed in the processing, use, handling or storage of the substance;
- b) individuals' actual and potential exposure to the substance; and

- c) the measures and procedures required to control the exposure.

6.2 Control Program

If the assessment discloses a potential exposure, the supervisor, in consultation with the involved individual(s), JHSC and the appropriate safety representative, shall develop and implement a Designated Substance Control Program as prescribed under the O. Reg. 490/09 Designated substance regulation.

6.2.1 Depending on the designated substance in question, the control program may specify some, or all, of the following provisions:

- a) engineering controls, work practices, hygiene practices and facilities to control the exposure;
- b) monitoring of concentration of the designated substance in the air and individual exposures;
- c) exposure records;
- d) medical examinations and clinical tests for individuals; and,
- e) training programs for supervisors and involved individuals.

6.3 Monitoring

6.3.1 The designated substance regulations require that employers follow specific air-emission testing and medical codes. A copy of air monitoring results must be given to the JHSC. The regulations also contain codes specifying the procedures to be followed by doctors who conduct prescribed medical examinations.

6.3.2 Results of airborne concentrations of a designated substance shall be posted on a health and safety board for no less than 14 days.

6.4 Training

6.4.1 All individuals required to work with designated substances shall be WHMIS trained.

6.4.2 All individuals required to work with designated substances shall receive hazard specific training that includes the following:

- a) the designated substance regulation;

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- b) engineering controls, work practice, hygiene practices;
 - c) the use and care of protective equipment (i.e. respirators, face shield gloves etc.);
 - d) spill containment and hazardous waste disposal procedures; and,
 - e) emergency response procedures.

7 Records

- 7.1 Supervisors are responsible for the maintenance of designated substance inventory and having a copy of assessment available.
- 7.2 Copies of designated substance control programs and environmental monitoring records shall be provided to and maintained by the appropriate Safety Office and the JHSC.
- 7.3 Copies of medical monitoring records shall be maintained by the Occupational Health Nurse in EHS.
- 7.4 Air monitoring records shall be kept for no less than 5 years.

Appendix A:

**Designated Substance Assessment Form
RECORD OF DESIGNATED SUBSTANCE ASSESSMENT**

SUBSTANCE:
DATE:

DEPARTMENT:
PI/SUPERVISOR:
LOCATIONS:
<u>ASSESSMENT PREPARED BY:</u> <u>TITLE:</u> <u>DATE PREPARED:</u>

APPLICATION - WORKSHEET 2: IS WORKER EXPOSURE LIKELY

1.	In what form does the substance enter the department? Product Title: Type of Container: _____ Size of Container: _____		
2.	Is this form altered during use or in the operation: YES <input type="checkbox"/> NO <input type="checkbox"/> If YES, indicate altered form:		
3.	Is there a possibility of the substance being released into the workplace environment during normal use? YES <input type="checkbox"/> NO <input type="checkbox"/>		
4.	If YES, to Question 3, specify the job functions and approximate number of employees who might be exposed: <table><thead><tr><th>Job Function</th><th>Number of Employees</th></tr></thead></table>	Job Function	Number of Employees
Job Function	Number of Employees		
5.	If YES, to Question 3, Indicate how workers could be exposed: Inhalation <input type="checkbox"/> Ingestion <input type="checkbox"/> Skin Absorption <input type="checkbox"/> Skin Contact <input type="checkbox"/>		
6.	If NO, to Question 3, is there a likelihood of escape due to leaks, accidents, etc.? (Liquid is decanted or diluted, solid is dissolved into liquid and can be spilled, etc.) YES <input type="checkbox"/> NO <input type="checkbox"/>		

CONCLUSIONS

If protection against exposure has been left up to some engineering control measure which can fail, or deteriorate for any reason, or to a work hygiene practice, an assessment is necessary -Proceed to Worksheet III

If yes to question 6, an assessment is necessary – proceed to Worksheet III:

If NO, substance is being stored only and no further action is necessary.

Date Completed:

ASSESSMENT – WORKSHEET 3: PROCESS DESCRIPTION

NAME OF PROCESS:

In the following table **describe the entire process in steps** (e.g. Step 1: Storage, Step 2: Dispensing/Solution Preparation...). **Detail the engineering controls (e.g. fume hoods, secondary containment, etc.), the Administrative Controls (e.g. training, etc.) and the PPE that will be employed throughout the process. Discuss emergency procedures for spills or exposure AND waste disposal.**

Experimental Process from Storage to Disposal	<i>Description</i>	<i>Likely Exposure</i> Yes / No

CONCLUSION: WORKSHEET 4: IS A CONTROL PROGRAM NECESSARY?

CONCLUSION A: IT IS HIGHLY UNLIKELY THAT A WORKER'S HEALTH MAY BE AFFECTED. A control program is not necessary.

CONCLUSION B: A WORKER'S HEALTH MAY BE AFFECTED. **A control program is necessary Or improvements are needed to an existing program. Contact EOHSS before proceeding.**

DATE: _____

SIGNED _____

ASSESSMENT – WORKSHEET 4: - EXISTING CONTROLS (cont'd)

<u>Process Flow Stage</u>	<u>Control Description</u>	<u>Problems / Recommendations</u>
	<p>Hygiene Facilities and Practices:</p> <p>Training / Information:</p> <p>Emergency Procedures / Equipment</p> <p>Personal Protective Equipment</p>	

ASSESSMENT – WORKSHEET 5: JOB EXPOSURE ANALYSIS

Process Flow Stage	Job Title	Total Number of Employees	Tasks Where Exposure Likely	Duration Hrs per Week	PPE Req'd To Be Used
1.	1.				

CONCLUSIONS

Jobs/ tasks to be noted during walk through survey:

ASSESSMENT – WORKSHEET 6: HEALTH EFFECTS

1. Any reported health effects? If so, describe.
2. Any current Medical Program? If so, describe.
3. Previous exposure monitoring results? If so, describe.

CONCLUSIONS

Health effects known at this stage: YES NO

Further information required: YES NO

ASSESSMENT – WORKSHEET 8: WALK THROUGH

Evidence of Contamination:

Hygiene Facilities and Work Practices:

Ventilation Systems:

Storage Facilities:

ASSESSMENT – WORKSHEET 9: WALK THROUGH CONCLUSIONS

1(a). Were any areas found where controls are required or where existing controls may require improvement?

YES NO

1(b). If YES, indicate the areas where the controls may be required or where existing controls may require improvement.

AREA

SUGGESTED IMPROVEMENTS

2(a). Personal exposure monitoring is required. YES NO

2(b). If YES, Indicate where:

3. Indicate any workers for whom medical testing and / or examinations may be required.

CONCLUSION: WORKSHEET 10: IS A CONTROL PROGRAM NECESSARY?

CONCLUSION A: NO WORKER'S HEALTH MAY BE AFFECTED.

CONCLUSION B: A WORKER'S HEALTH MAY BE AFFECTED.

OVERALL CONCLUSION

A control program is necessary. YES NO

Improvements needed in existing program:

DATE: _____

SIGNED _____