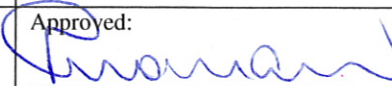
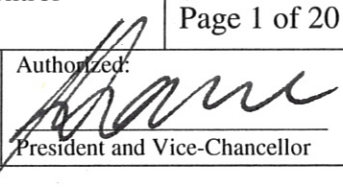
 <p>McMaster University Risk Management Manual</p>	<p>RMM # 500 Title: Designated Substances Control Program</p>	<p>Date: Aug 2010 Page 1 of 20</p>
<p>Submitted: Risk Management Support Group</p>	<p>Approved:  Vice President, Administration</p>	<p>Authorized:  President and Vice-Chancellor</p>

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

2.1 All individuals and contractors who process, use, handle or store designated substances in McMaster University owned 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 Safety Orientation and 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, RMM#309



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 **Acronyms:**

EOHSS - Environmental & Occupational Health Support Services

CJHSC - Central Joint Health and Safety Committee

JHSC - Joint Health and Safety Committee

PPE – Personal Protective Equipment

MSDS –Material Safety Data Sheet

MOE – Ministry of Environment

RMSG – Risk Management Support Group

TWA – Time Weighted Average unit. The Designated Substance regulations require that the TWA of workers to designated substances does not exceed specified limits

FHSc safety office – Faculty of Health Sciences Safety Office



5 RESPONSIBILITIES

5.1 Role of Senior Managers (Deans/ Directors / Chairs):

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 Supervisor (Administrative and Academic):

The responsible supervisor 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 MOE 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 these are changes in protocol.

5.3 **Role of Authorized Individuals:**

Individuals authorized to use a designated substance shall:

- receive WHMIS Core 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 Environmental & Occupational Health Support Services and Faculty of Health Sciences Safety Office:**

The EOHSS/FHSc Safety Office shall:

- coordinate the activities of the RMSG and the recommendation of CJHSC in developing programs for the safe management of hazardous materials including designated substances;
 - 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.
-



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

The JHSC shall:

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

5.6 **Role Central Joint Health Safety Committee:**

The CJHSC shall:

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

6 **PROCEDURES**

6.1 **Assessment**

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

6.1.2 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.

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

6.1.4 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 air borne 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 Core trained.
- 6.4.2 All individuals require to work with designated substances shall receive hazard specific training that includes the following:
- a) the designated substance regulation;
 - 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

SAMPLE

Designated Substance Assessment Form

RECORD OF DESIGNATED SUBSTANCE ASSESSMENT

SUBSTANCE:

DATE:

DEPARTMENT:

DEPARTMENT OPERATIONS:

LOCATIONS:

ASSESSMENT PREPARED BY:

TITLE:

DATE PREPARED:



**APPLICATION - WORKSHEET 1: IS THE DESIGNATED
SUBSTANCE PRESENT?**

1. Do any material safety data sheets from your suppliers indicate the presence of the substance?

YES

NO

2. If substance is present, indicate the department where it is used, nature of the use (i.e. Direct or indirect) and the quantity used per month or year:

<u>Product Name</u>	<u>Department</u>	<u>How Used?</u> <u>Direct / Indirect</u>	<u>Quantity</u> <u>Per Month / Year</u>

CONCLUSIONS

Read statements and check applicable box:

Substance not present anywhere in workplace; regulation does not apply
No Assessment needed

Processes / activities have been identified where substance present.
Proceed to worksheet 2.



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 NO

If YES, indicate altered form:

3. Is there a possibility of the substance being releases into the workplace environment during normal use? YES NO

If YES, indicate the stage of the operation or areas where this can occur.

4. If YES, to Question 3, specify the job functions and approximate number of employees who might be exposed:

Job Function

Number of Employees

5. If YES, to Question 3, Indicate how workers could be exposed:

Inhalation Ingestion Skin Absorption
Skin Contact

6. If NO, to Question 3, is there a likelihood of escape due to fume hood leaks, accidents, etc.?

YES NO

7. Are workers likely to be exposed? YES NO

CONCLUSIONS

Are there any activities / situations where exposure by any route is likely

YES NO

If NO, no further action is necessary. Date Completed _____

If YES, an assessment is necessary – **proceed to Section III**

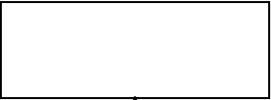


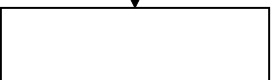
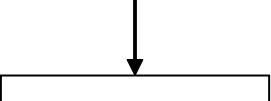
Note: If protection against exposure has been left up to some engineering control measure which can fail, or deteriorate for any reason, or to a work hygiene practice, an assessment is necessary -**Proceed to Section III**





ASSESSMENT – WORKSHEET 3: PROCESS DESCRIPTION

NAME OF PROCESS: _____

<u>Process Flow</u>	<u>Description</u>	<u>Likely Exposure</u> <u>Yes / No</u>
1. 		
↓		
2. 		
↓		
3. 		
↓		
4. 		
↓		
5. 		



ASSESSMENT – WORKSHEET 4: EXISTING CONTROLS

<u>Process Flow Stage</u>	<u>Control Description</u>	<u>Problems / Recommendations</u>
	<p><u>Engineering Controls:</u></p> <p><u>Work Practices</u></p>	



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 7: FLOOR PLAN

LOCATION: _____

DATE: _____

DIMENSIONS: L___ W___ H___

- WORK STATION – enter number form job title – Worksheet 5
- EXPOSURE SOURCE – enter number from Process Flow – Worksheet 3
- VENTILATION – enter L for local exhaust & G for general ventilation



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 _____
