

 McMaster University Risk Management Manual	RMM # 500 Title: Designated Substances Control Program	Date: July 2003 Page: 1 of 6
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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.
- 1.2 To ensure compliance with the Occupational Health and Safety Act and the regulations for Designated Substances

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 in the field.

3 RELATED DOCUMENTS

- 3.1 Occupational Health and Safety Act RSO 1990
 - 3.2 **Regulation 835, Designated Substance – Acrylonitrile**
 - 3.3 **Regulation 836, Designated Substance – Arsenic**
 - 3.4 **Regulation 837, Designated Substance - Asbestos**
 - 3.5 **Regulation 838, Designated Substance – Asbestos on Construction Projects**
 - 3.6 **Regulation 839, Designated Substance – Benzene**
 - 3.7 **Regulation 840, Designated Substance – Coke Oven Emissions**
 - 3.8 **Regulation 841, Designated Substance – Ethylene Oxide**
 - 3.9 **Regulation 842, Designated Substance – Isocyanates**
 - 3.10 **Regulation 843, Designated Substance – Lead**
 - 3.11 **Regulation 844, Designated Substance – Mercury**
 - 3.12 **Regulation 845, Designated Substance – Silica**
 - 3.13 **Regulation 846, Designated Substance – Vinyl Chloride**
 - 3.14 McMaster University Environmental Health and Safety Policy
 - 3.15 McMaster University Asbestos Management Control Policy
 - 3.16 McMaster University Safety Training and Orientation Program
 - 3.17 McMaster University WHMIS / Hazardous Materials Management Program
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	McMaster University Risk Management Manual	RMM # 500 Designated Substances Control Program	Date: July 2003 Page: 2 of 6
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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 regulation
- 4.2 **Assessment** – an evaluation 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 require 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 specific designated substance regulation (See list of twelve Designated Substances noted in Section 3).
- 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.
- BSC**- Biosafety Committee.
- CJHSC** - Central Joint Health and Safety Committee.
- JHSC**- Joint Health and Safety Committee.
- MSDS** –Material Safety Data Sheet.
- RMSG** – Risk Management Support Group (Health Physics, Environmental & Occupational Health Support Services, Faculty of Health Sciences Safety Office, Physical Plant Safety/ Training Office and Security Services).
- TWAE** – Time Weighted Average Exposure. The designated substance regulations require that the TWAE of its workers to designated substances does not exceed specified limits
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	McMaster University Risk Management Manual	RMM # 500 Designated Substances Control Program	Date: July 2003 Page: 3 of 6
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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 Management Program 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 prescribed regulation;
 - conduct an audit to identify any designated substances used, handled or stored 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 or stored in the workplace using the McMaster University web based inventory system where possible. Otherwise written inventory records must be maintained.
 - conduct an assessment of any designated substance used, handled or stored in the workplace using the specific designated substance regulation as a guide (See Assessment Forms Appendix A);
 - consult with the appropriate RMSG office prior to making the assessment;
 - inform the JHSC prior to all assessments of designated substances in the workplace;
 - document any control program required for a designated substance and review program with the appropriate RMSG office and the JHSC;
 - ensure that all individuals required to use, handle or store designated substances are have access to the specific 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;
 - ensure that all individuals supervised required to handle hazardous materials have received WHMIS training and are familiar with and have access to the WHMIS/ Hazardous Material Information System (RMM # 501);
 - ensure that all individuals supervised by them who handle hazardous material are trained in the safe handling, separation, storage and disposal procedures for the spill specific hazardous materials used in the workplace;
 - provide kits having a capacity to clean up incidental spills;
 - 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; and,
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	McMaster University Risk Management Manual	RMM # 500 Designated Substances Control Program	Date: July 2003 Page: 4 of 6
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- ensure that engineered systems to control exposures (e.g. fume hoods and bio-containment cabinets are maintained and tested).

5.3 **Role of Authorized Individuals:**

Individuals authorized to use a designated substance shall:

- be WHMIS trained and certified;
- be trained in the requirements of the WHMIS / Hazardous Materials Management System (RMM # 501);
- receive specific training related to the designated substance regulation;
- be trained 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 and disposal of the designated substance;

5.3 **Role of RMSG:**

The RMSG shall:

- provide the oversight and audit functions for the safe management of designated substances used or stored by McMaster University staff at any location;
- provide assistance in conducting designated substance assessments in the workplace;
- develop designated substance control programs in consultation with user groups and the JHSC's e.g. Asbestos Management Control Program; and,
- provide training for the safe use, storage and disposal of designated substances.

5.6 **Role of Environmental & Occupational Health Support Services:**

The E&OHSS Office shall:

- coordinate the activities of the RMSG in the development of hazardous materials and WHMIS training initiatives; and,
- coordinate the activities of the RMSG and the CJHSC in developing programs and policies for the safe management of hazardous materials.

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

The JHSC shall:

- review the designated substance assessments and;
- receive and review designated substance control programs and monitoring results.

	McMaster University Risk Management Manual	RMM # 500 Designated Substances Control Program	Date: July 2003 Page: 5 of 6
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5.8 Role Central Joint Health Safety Committee:

The CJHSC shall:

- review and make comment on the Designated Substance Management 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 or stored to ensure that the TWAE of persons working in the designated area does not exceed the limits specified in the specific designated substance regulation.
- 6.1.3 The supervisor will consult with the appropriate RMSG office prior to conducting the assessment.
- 6.1.4 The involved individuals and a representative from the JHSC shall participate in the assessment
- 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 RMSG representative, shall develop and implement a designated substance control program as prescribed under the specific 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.

	McMaster University Risk Management Manual	RMM # 500 Designated Substances Control Program	Date: July 2003 Page: 6 of 6
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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.

6.4 **Training**

- 6.4.1 All individuals required to work with designated substances shall be WHMIS trained and certified;
- 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 monitoring records.
- 7.2 Copies of designated substance control programs and environmental monitoring records shall be provided to and maintained by the appropriate RMSG Office and the JHSC.
- 7.3 Copies of medical monitoring records shall be maintained in the employee's personnel file.
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	McMaster University Risk Management Manual	RMM # 500 Designated Substances Control Program	Final Date: July / 03 Page: A-1
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Appendix A Designated Substance Assessment Form
RECORD OF DESIGNATED SUBSTANCE ASSESSMENT

SUBSTANCE:

DATE:

COMPANY:

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>
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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 plant?
 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 released 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 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

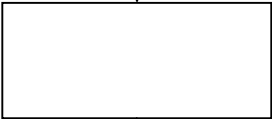
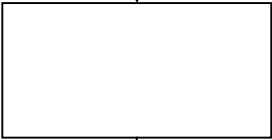
YES ☐ NO ☐

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>
	<u>Engineering Controls:</u>	
	<u>Work Practices</u>	

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

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

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 8: WALK THROUGH (cont'd)

Dispensing Procedures:

Housekeeping:

Personal Protective Equipment:

Emergency Facilities / Procedures:

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 _____
