



THE UNIVERSITY OF WESTERN ONTARIO
OCCUPATIONAL HEALTH AND SAFETY

DESIGNATED SUBSTANCES PROGRAM
LEAD

Prepared by: Occupational Health and Safety
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INTRODUCTION:

Lead is prescribed as a designated substance under the "*Regulation respecting Lead - made under the Occupational Health and Safety Act*", [R.R.O. 1990, Reg. 843 as amended by O. Reg. 519/92; 389/00, 109/04]. Designated substance regulations apply to employers and workers at workplaces where two conditions are met:

- the substance is present in the workplace, and
- a worker is likely to inhale, ingest or absorb some of the substance that is present.

The designated substance regulations require that an assessment be conducted to determine the extent to which workers are exposed to the substance. The assessment is done to determine:

- whether workers are inhaling, ingesting or absorbing the substance at present or whether they are likely to do so in the future; and
- whether or not the health of a worker may be affected by exposure to the substance.

This assessment covers the following details:

- the methods and procedures used in the processing, use, handling or storage of the substance;
- the actual and the potential exposure of workers to the substance; and
- the measures and procedures necessary to control such exposure by means of engineering controls, work practices, and hygiene practices and facilities.

RESPONSIBILITIES:

Every person working with lead is responsible for following safe work practices. The Principal Investigator/supervisor is responsible for ensuring that an inventory of all designated substances is maintained, including recording of the amount used. The inventory is to be submitted to Occupational Health and Safety (OHS). The Principal Investigator/supervisor is responsible for ensuring adequate training is provided to employees and that safety equipment is used, including personal protective equipment and engineering controls e.g. fumehoods.

IDENTIFICATION AND USE:

University of Western Ontario (UWO) Employees using lead or lead compounds are to submit a Designated Substance Inventory form to OHS indicating the location and the amount used. The forms are stored in the "Designated Substance" binder and the information on them is also stored in the Lab Safety Database. Lead compounds are used in small quantities (less than 1kg/container) in various locations at UWO. Lead metal is used as shielding and sealing.

EXPOSURE POTENTIAL / CONTROL MEASURES:

Exposure Potential

The amounts of lead compounds used at UWO are small and therefore the exposure potential is low should there be an accidental spill. Lead metal used as shielding and in sealing is in the form of a solid block or sheet, the surface of which quickly oxidises to form an insoluble protective layer of basic lead carbonate. Each location listed will be assessed depending on the amount and form used

Procedures in place

- Working With Lead Metal – Appendix 1.
- PPD&CPSD Draft Lead Based Paint Abatement And Work Procedures – Appendix 2.

In order to ensure that the potential for exposure remains low:

- Only the minimum amount of a chemical should be purchased.
- All spills must be cleaned up immediately.
- Waste lead must be properly collected and disposed of promptly.

Call Campus Community Police Services (CCPS) @ 911 for the UWO Hazardous Material Response Team who, will respond to all hazardous materials emergencies, including designated substances. The team is equipped with the proper personal protective equipment and is always on call to deal with all situations involving hazardous materials emergencies

Control Measures

Employees handling lead and lead compounds are required to follow the procedure for handling chemicals outlined in the Laboratory Health and Safety Manual and the Hazardous Materials Management Handbook.

ASSESSMENT

Each location listed will be assessed depending on the amount and form used. The information will be stored in Lab Safety Database. If an assessment is required a Lead Assessment Form (Appendix 3) is to be completed and stored in the “Designated Substance” binder. Should an assessment result in the need for a control program this will be implemented as required.

MEDICAL SURVEILLANCE

Each employee at UWO is to have a [Position Hazard Communication Form](#) filled out by their supervisor and submitted to Workplace Health. If medical surveillance is required, Workplace Health will arrange the necessary tests as required. Should the employee decide not to participate in a medical surveillance program, a waiver must be signed by the employee.

TRAINING

The supervisor is responsible for ensuring all personnel are trained in the handling of the lead that they are working with. All training is to be documented and the records kept.

The UNIVERSITY of WESTERN ONTARIO

Working with Lead Metal

PURPOSE:

This procedure outlines the minimum recommended requirements to follow in handling lead metal at the University.

RESPONSIBILITY:

It is the responsibility of all budget unit heads, supervisors, instructors and teaching assistants to ensure that all employees and students wear suitable personal protective equipment when handling lead metal.

PROCEDURE:

Read MSDS before doing anything involving lead.

For handling lead metal only:

- 1) Wear safety glasses and disposable gloves.
- 2) Upon completion, dispose of gloves in regular garbage.
- 3) Wash thoroughly with soap and water before proceeding to another task.

For cutting, shaping, grinding, or any other aggressive task which may generate lead dust and/or granules, the following procedure must be adhered to:

- 1) Work area must be free of objects and material that could become contaminated with lead. Any tools or equipment not being used in the operation should be covered or removed from the immediate work area.
- 2) A designated garbage container with a liner (garbage bag) must be prepared and in the area so that contaminated items can be disposed of properly. The container must be labelled, "LEAD WASTE".
- 3) Where the generation of dust or small lead fragments may be possible, cover work surface with 6-mil polyethylene sheet before working with lead. No lead should touch any surface which is not properly covered with Poly sheet.
- 4) Wear disposable coveralls appropriate for the work and disposable nitrile gloves. Gloves should never be re-used after removal.
- 5) Wear a High Efficiency Particulate Air Filter (HEPA) half face respirator when cutting or machining lead metal.
- 6) When finished the job, clean all tools used during the operation with a wiper / rag, and

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alcohol. All dirty wipers / rags must be placed in the garbage marked, "LEAD WASTE".

- 7) Once the tools are cleaned up properly and put away, and the lead metal has been properly stored, the poly sheet can then be removed. Always fold top side in to capture any loose lead dust.
- 8) Dispose of poly sheet in the designated garbage container along with any other contaminated disposables.
- 9) Container marked "LEAD WASTE" must be packaged properly and disposed of by means of hazardous waste pick-up. (refer to OH&S web page for instructions)

The UNIVERSITY of WESTERN ONTARIO
Physical Plant and Capital Planning Services Division

POLICY: LEAD BASED PAINT ABATEMENT AND WORK PROCEDURES (Draft)			NUMBER: WP-47
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PREPARED BY: PP&CPSD	AUTHORIZED BY: D.V.B. Riddell	CLASSIFICATION: Work Procedure	EFFECTIVE: September 1, 2004
			SUPERSEDES: New
<u>APPLICATION:</u>			
<p>This work procedure shall be followed when the presence of lead based paint is either confirmed or suspected in the following cases:</p> <ol style="list-style-type: none"> 1 The repair of any peeling lead based paint (including the clean up of any material that has already fallen off). 2 Performing any work that will disturb any lead based paint (such as cutting, drilling or sanding a painted item). 3 Applying sufficient heat to a lead based paint so that the evolution of lead fume is possible (such as cutting torches, or paint removal heat guns). 4 Demolition and disposal of material/equipment coated with lead based paint. 			
<u>NOTIFICATION OF OCCUPANTS:</u>			
<p>All occupants of the affected work area must be notified in writing by PPD project supervisor that work involving the possible disturbance of lead based paint is being undertaken. The type of work being done and the duration of the project should be specified. The project supervisor is also responsible for providing verbal notification to staff if the work will require less than four hours of disruption.</p>			
<u>PREPARATION OF WORK AREA:</u>			
<ol style="list-style-type: none"> 1. Shut down, or isolate, all ventilation serving the work area. Seal all ventilation openings with 6 mil. polyethylene sheets and duct tape. 2. Remove all furnishings and equipment from the work area where practical. When not practical, cover and seal with 6 mil. polyethylene and duct tape. 3. Enclose the work area with 6 mil. polyethylene. Construct an entrance to the enclosure with a double overlapping flap of 6 mil. polyethylene. Carpeted floors require a single layer of 6 mil. polyethylene while hard surfaced floors can be left exposed and cleaned prior to the removal of the 			

enclosure.

4. Post applicable warning signs at the entrance(s) to the work area.

WORKER PROTECTION:

All individuals entering the area must be trained in lead abatement procedures.

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WORKER PROTECTION- continued:

1. Workers must wear at all times approved half face or full face respirators with P100 cartridges. If half face respirators are being used the workers must also wear dust proof goggles at all times.
2. Disposable non-breathable coveralls with head and foot protection must be worn at all times.
3. Disposable gloves suitable for the intended work must be worn at all times.

WORK PROCEDURES:

1. All loose and peeling paint must first be removed using manual scrapers. All debris generated during this process must be collected using a HEPA vacuum and properly disposed of as lead waste.
2. Frequently clean up any dust and waste contaminated with paint debris. Clean up must be performed with a HEPA vacuum or by wet wiping. All waste contaminated with lead paint debris must be disposed of as lead waste.
3. Disposable coveralls and foot wear shall be removed prior to leaving the work area and must be disposed of as lead waste as well.
4. Individual leaving the enclosure shall immediately wash their hands and face thoroughly at the nearest washroom.

CLEAN-UP:

1. All lead based paint waste will be collected within the enclosure and double bagged in 6 mil polyethylene bags and labelled as lead-contaminated waste on the outside of the bag.
 - All tools and equipment inside the enclosure shall be HEPA vacuumed before removal from enclosure.
 - If the floor has not been covered with 6 mil. polyethylene it must be HEPA vacuumed or wet-mopped after all equipment have been removed.
 - Plastic sheeting shall be wetted with an adhesive spray before removal.
 - All Plastic sheeting shall be disposed of as contaminated waste.
 - All waste bags shall be HEPA vacuumed prior to removing them from the work area.

If a designated substances assessment confirms the presence of lead-based paint, then the disturbance of such material shall be carried out in conformance with this procedure.

