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Section: Laboratory Safety Manual	Subject Title: General Chemical Safety	
Issued by: LABORATORY MANAGER	Original Date: April 20, 2001	
Approved by: Laboratory Director	Revision Date: October 22, 2003	

Policy:

All laboratory personnel must be familiar with the standard precautionary terms for chemicals, practices for safe handling, storage, the resources for hazard containment, disposal and risk management. All employees who work with hazardous materials must participate in training programs and use the information learned.

Purpose:

This policy will help to maintain a safe and healthy workplace.

Responsibility:

Management and employee

Key Elements:

- WHMIS
- Knowledge of hazards
- Personal practices
- Using chemicals
- Control of hazards
- Storage of chemicals

Related Documents:

HANDLING CHEMICALS	MI\LS\12\01
LABELLING CHEMICALS	MI\LS\13\01
CHEMICAL INVENTORY PROCEDURE	MI\LS\13B\01
BULK DISPENSING OF FLAMMABLE LIQUIDS - 45 GALLON DRUM	MI\LS\14\01
BULK DISPENSING OF FLAMMABLE LIQUIDS - 20 L DRUM	MI\LS\15\01
DISPOSAL OF CHEMICAL WASTE	MI\LS\16\01

Procedure:

WHMIS

The WHMIS (Workplace Hazardous Material Information System) Regulation, made under the Occupational Health and Safety Act of Ontario, requires that almost all of the information listed above be available in the workplace. Information under WHMIS is disseminated in three ways:

- Labels
- Material Safety Data Sheets
- Education and Training.

WHMIS requires that all hazardous products be labeled and an MSDS for every hazardous product used in the workplace be readily available. WHMIS also requires that all workers who work with or around hazardous products be trained and knowledgeable regarding the safe handling, storage and disposal of the products they may use or encounter.

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GENERAL PROCEDURES FOR THE SAFE USE OF CHEMICALS

Knowledge of hazards	<ul style="list-style-type: none"> • Know the hazards associated with the materials you are using. Review labels and MSDS sheets. • Know emergency procedures • Know the locations of safety equipment such as emergency shower, eyewash, fire extinguisher, fire alarm, and emergency phone numbers.
Personal practices	<ul style="list-style-type: none"> • Avoid working alone in the laboratory. • Do not eat, drink, smoke, chew gum, or apply cosmetics, lip salve, contact lenses in areas where laboratory chemicals are used or stored. • Do not store food items or cosmetics in areas where laboratory chemicals are used or stored. • Confine long hair and loose clothing when working with chemicals. • Wear shoes with closed toes and closed heels • Wear appropriate personal protection equipment including lab coat, gloves and eye protection. • Do not smell or taste chemicals. • Do not use mouth suction for pipetting or starting a siphon. • Always wash hands and other exposed skin after chemical use.
Using chemicals	<ul style="list-style-type: none"> • Date chemicals when received and when opened. • Ensure incoming chemicals are on the inventory list • For chemicals that degrade in quality or become unsafe after prolonged storage, also date them with the shelf-life expiration date. • When using a chemical for the first time, read the label carefully and consult the MSDS. • Ensure that all required safety equipment is available and in good working order, including materials and equipment for spill response • Conduct a visual inspection of the container and its contents routinely. Ensure that all containers are in good condition and properly labeled. Indications for disposal of the contents include: <ul style="list-style-type: none"> • cloudiness in liquids • material changing colour • evidence of liquids in solids or solids in liquids • “puddling of material around outside of container • pressure build-up within the bottle • obvious deterioration of container • Never force open or bang a chemical container. • Keep work areas clean and uncluttered, with chemicals and equipment properly labeled and stored.

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Control of hazards	<ul style="list-style-type: none"> • Use appropriate personal protective equipment. • Conduct all processes that may result in the release of toxic vapors, fumes or dust within the fume hood or other adequate containment device. • Do not leave potentially hazardous chemical processes unattended. • Handle and store laboratory glassware with care to avoid damage and dispose of any damaged glassware in an appropriate sharps container • Always rinse used glassware and plastic ware after use and before giving to wash-up staff or placing in garbage. • Wear appropriate respiratory equipment when air contaminant concentrations cannot be sufficiently restricted by engineering controls.
Storage of chemicals	<ul style="list-style-type: none"> • Store all hazardous chemicals in a secure location, accessible only to authorized laboratory workers • Store large containers of hazardous liquids securely near floor but at a height that allows safe ergonomic handling • Minimize quantities of chemicals kept in the work area. • Store chemicals under appropriate conditions: <ul style="list-style-type: none"> • at appropriate temperature and humidity levels • away from heat sources such as steam pipes or laboratory ovens • dry and adequately vented storage locations • away from direct sunlight, electric motor • on shelves and in cabinets that are secured to prevent tipping • do not store liquid chemicals above eye level • Use only explosion-proof refrigerators and freezers for storage of flammable liquids. • Do not store unsegregated chemicals alphabetically. Segregate chemicals by hazard class (e.g., flammable liquids, organic acids, oxidizers, reactive chemicals) and store separately. • Storage areas should have a one hour resistance rating