

ENVIRONMENTAL HEALTH AND  
SAFETY SERVICE



POTENTIAL HAZARDS  
AT THE  
UNIVERSITY OF OTTAWA

August 2003

FOR CONTRACTORS  
AND  
NON-LABORATORY  
PERSONNEL



INTRODUCTION

This pamphlet will inform contractors and non-laboratory personnel of the hazards that may exist in a laboratory, should they have need to visit such an environment. Although these hazards **exist they generally pose a minimal risk to those who do not work directly with these materials described here.**

It is the University's practice to inform all individuals entering a laboratory of the associated risk, through the use of signage and information sheets. This pamphlet briefly describes the potential hazards, the applicable symbols (WHMIS and those used on door signs), and some of the precautions that should be used.

In addition, should you have any questions or concerns, a list of contacts who will be able to assist you is also provided.

LASERS

NOT APPLICABLE	
WHMIS	HAZARD SYMBOL

A laser is a device that emits a thin beam of either visible or invisible electromagnetic radiation (light). (LASER: Light Amplification by Stimulated Emission of Radiation) The device must be turned on to present a risk.

- ? Can damage the eyes
- ? Can cause skin burns

BIOHAZARDOUS

WHMIS	HAZARD SYMBOL

Biohazardous materials are infected with an organism, or their toxins, that have been shown to cause disease or are believed to cause disease in animals or people: e.g. bacteria, viruses, fungus and parasites.

- ? May cause disease or infection
- ? Symptoms may be immediate or delayed

RADIOACTIVE MATERIALS

NOT APPLICABLE	
WHMIS	HAZARD SYMBOL

Radioactivity is the release of energy from an unstable atom. This energy varies in strength and may cause very little effect or a significant hazard. It is both naturally occurring and manmade.

- ? May cause cancer
- ? May cause genetic abnormalities
- ? Can effect specific organs

X - RAYS

NOT APPLICABLE	
WHMIS	HAZARD SYMBOL

Like radioactivity, X-rays are energy released from an unstable atom. This energy varies in strength and effect. Although naturally occurring, most X-rays are produced by specially designed equipment. This equipment must be "on" to generate X-rays.

- ? May cause cellular damage
- ? Can affect embryos
- ? May affect blood producing organs

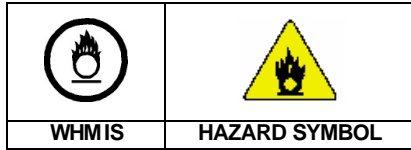
TOXIC

WHMIS	HAZARD SYMBOL

Toxic materials can be life threatening or cause serious injury or illness. These effects may be immediate or delayed.

- ? May cause death, permanent or temporary injury if swallowed, inhaled or absorbed through the skin
- ? May cause birth defects, sterility or cancer
- ? May cause allergies or sensitivities
- ? May affect the central nervous system, liver and kidneys

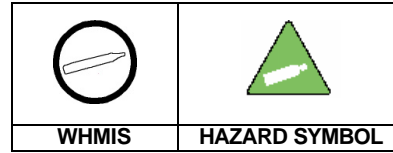
## OXIDIZING SUBSTANCES



**Oxidizers are chemicals which cause other materials to catch fire by supplying oxygen.**

- ? Can cause skin or eye burns
- ? Increase fire and explosion hazard
- ? May cause combustibles to explode or react violently

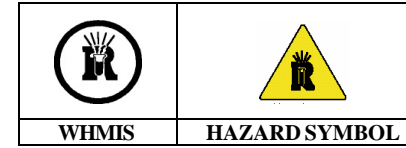
## COMPRESSED GAS



**Compressed gas is a substance contained under pressure greater than atmospheric pressure.**

- ? Could explode due to an increase in pressure, if heated, or dropped
- ? May be flammable, toxic or corrosive
- ? May cause frostbite
- ? May cause skin irritation

## DANGEROUSLY REACTIVE



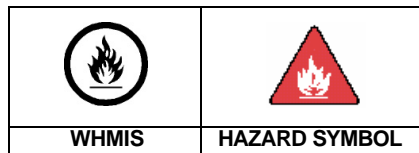
**Dangerously reactive materials can react with water to release a toxic gas, or become self-reactive under conditions of shock, high pressure or temperature.**

- ? May cause bodily burns and lesions
- ? May be toxic

## GENERAL PRECAUTIONS

- ? Avoid direct contact
- ? Minimize exposure time
- ? Wear appropriate eye and body protection
- ? Ensure all vaccinations are up-to-date
- ? Wash hands frequently, prior to eating or drinking, and when leaving the work area
- ? Avoid placing hands to mouth, nose, eyes or cuts
- ? Do not work with an open cut or blister (ensure that it is appropriately bandaged)

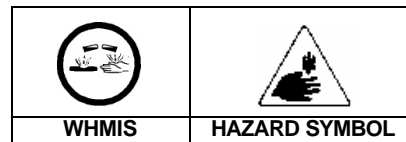
## FLAMMABLE - COMBUSTIBLE



**Flammable materials may be readily ignited at room temperature. Combustible materials must be heated before they will ignite.**

- ? Can cause burns
- ? Can cause respiratory irritation

## CORROSIVE



**Corrosives materials can attack and destroy on contact: human tissue, clothes and other materials – even metals.**

- ? Can cause eye and skin irritation on exposure
- ? Can cause severe burns and/or tissue damage
- ? Can cause respiratory damage if inhaled.
- ? Can cause eye damage

## PERSONAL PROTECTIVE EQUIPMENT – PPE



- ? Wear appropriate gloves, closed shoes and protective eye wear
- ? Wear protective clothing that is not so loose that it could catch on something, resulting in a spill or breaking / damaging equipment

## PROCEDURES

- ? Specific procedures may apply to hazardous materials. Ensure you verify with your supervisor or U.O. staff; what procedures exist and that these are followed.
- ? Do not move, handle or dispose of any material labeled with the symbols shown here without prior authorizations
- ? **Report any concerns immediately to Protection Service (562-5411)**, so appropriate follow-up can be undertaken
- ? If in doubt, verify with your Supervisor or Protection Service prior to undertaking any additional action

## ADDITIONAL INFORMATION

**For additional information or clarification, please contact:**

- ? Your Supervisor
- ? Physical Resources Service..... **562-5712**
- ? Environmental Health and Safety Service ..... **562-5892**
- ? Protection Service ..... **562-5411**