

This pamphlet is newly revised - comments are most welcome at 789-3613 ☺ March 8, 2012



## Environmental Health and Safety Office

### Radioactive Material

The University of Manitoba has the duty to inform anyone that may be exposed to radiation from radioactive materials of the potential hazards (MB 217/2006 Workplace safety and Health Regulation Section 18.4). Low level ionizing radiation may induce pre-mature aging and cancer. *The exposure from radioactive materials used in areas controlled by the University of Manitoba is so small that the increase risk is insignificant. Please do your part by following the instructions in this pamphlet.*

**What kinds of Radioactive Material are used at the University?** Radioactive Material used at the University has two major forms.

#### RADIOACTIVE CHEMICALS (open source radioactive materials)



Most often radioactive material at the University is used as a radioactive chemical to trace chemical reactions.

Radioactive material is purchased in small volumes of liquid. These stock vials usually have less than one milliliter (cubic centimeter) and are used in small volumes in lab containers such as test tubes and Petri dishes. Occasionally radioactive liquids are injected or ingested by animals that are kept in labs or animal care facilities.

**SEALED SOURCE RADIOACTIVE MATERIAL** Some researchers use sealed sources of radioactive materials to measure the effect to the ionizing radiation emitted by the source. Small sealed sources are often used as calibration or check sources.

Larger sealed sources may be used in specialized equipment for Mossbauer, X-ray diffraction or to measure soil moisture.



### How is radioactive material controlled at the University?

The Canadian Nuclear Safety Commission (CNSC) has issued a consolidated license to the University of Manitoba to allow the University to possess, use and store radioactive materials for research purposes. The license requires a Radiation Protection Committee to oversee and advise on the Radiation Safety Program. The Licence requires researchers apply for an Internal Radioisotope Permit in order to purchase, possess, store, use and dispose radioactive material.

The Environmental Health and Safety Office (EHSO) provides staff and resources for the day to day operations of the Radiation Safety Program, including: an internal Radioisotope Permit system, the development of the Radiation Safety Manual, general radiation safety training, inspections, centralized inventory, disposal of radioactive wastes and liaison with the CNSC. Details on the Radiation Safety Program are found at [http://www.umanitoba.ca/admin/human\\_resources/ehso/rad\\_safety/index.html](http://www.umanitoba.ca/admin/human_resources/ehso/rad_safety/index.html)

### Do I need more advanced Radiation Safety training?

If you work with Radioactive Material, you need more information/ training than what is in this pamphlet or in the EHSO orientation. Talk to your supervisor and contact Radiation Safety at 789-3613 or 789-3359.

### Where may Radioactive Material be Used or Stored?

Rooms permitted to use radioactive material will have one of the following symbols posted on a sign at the entrance:



**CAUTION:** You may enter and perform duties

**DO NOT ENTER:** Special procedures required. Do not enter unescorted except for Life Safety or Building Safety reasons.



The sign at the entrances also has Emergency Contact information for that particular room and the numbers for Environmental Health and Safety Office and Security Services (24 hour).



All radioactive material must be marked with this radiation warning symbol; it is called a trefoil. Avoid contact with benches or fume

hoods marked with the trefoil. Radioactive Material may be stored in a marked fridge or freezer. It is safe to enter these labs. Stay out of fridges, freezers or storage cabinets marked with the trefoil or Radiation Warning Sign.

Currently, radioactive material is used at the University of Manitoba in 220 locations:

- 100 Bannatyne Campus
- 13 Manitoba Institute of Cell Biology
- 100 Fort Garry Campus
- Off Campus at Carman & field locations.



## How can I stay safe?

For the types of radioactive materials at the University, it is normally safe to be within 2 meters for a short time (up to 1hr).

Remember these four rules to reduce your risk:

1. Don't remove **shielding** (lead or plastic).
2. Limit the **time** you spend in these areas marked with the radiation warning symbol or trefoil.
3. Maximize the **distance** between you and the radioactive material.
4. Use good lab hygiene – lab coats, gloves and wash your hands when leaving research areas and always wash your hands before eating, applying cosmetics or smoking.



Never touch anything labeled "RADIOACTIVE" or marked with Radiation Warning Sign. The trefoil could be red, black or magenta.

**Is there anything else I should know about Radioactive Materials at the University?** Radioactive material is never to be left unsecured unless under direct supervision of permitted workers. Please lock and close the room door if you are the last to leave the permitted area.



Updated  
March 8, 2012

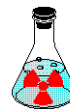
## What if I discover an unattended Radioactive Package in a public area?

1. Secure the area if possible.
2. Step back - try to stay at least 2 metres away from the package.
3. Notify the Environmental Health and Safety Office at 474-6633 during business hours or Security Services at 555/ 474-9341 after hours.



## What do I do in case of a Fire or Explosion in radioactive materials use room?

First aid takes precedence over radioactive contamination control. *Care should be taken to protect the first-aider from potential hazardous exposure to chemical, biological or radioactive materials.*



1. Activate Fire Alarm and follow your local procedures.
2. Stay at least 2 meters away from any possible radioactive contamination.
3. Potentially contaminated people should remain on scene at a safe distance until cleared by Radiation Safety personnel.

## What do I do in case of a Suspected Radioactive Spill?

1. Secure area to warn unsuspecting people from potential harm. Step back - try to stay at least 2 meters away.
2. Notify the Environmental Health and Safety Office at 474-6633 during business hours or Security Services at 555/ 474-9341 after hours.
3. First responders and other potentially contaminated people should remain on scene at a safe distance until cleared by Radiation Safety personnel.

**Radioactive spills are generally cleaned up by the permitted lab staff. Spill clean up is NOT a job for caretakers, housekeeping or security.**

## How do I get more information or safety training?

Talk to your supervisor and contact EHSO.

email: [EHSO@umanitoba.ca](mailto:EHSO@umanitoba.ca)

### ENVIRONMENTAL HEALTH and SAFETY OFFICE

Fort Garry	474-6633	Bannatyne	789-3613
Fax-	474-7629	Fax	789-3906
<a href="http://www.umanitoba.ca/admin/human_resources/ehso">http://www.umanitoba.ca/admin/human_resources/ehso</a>			

After Hour Emergencies Call **555** from all U of M phones or **#555** from cell phones on Rogers Wireless and MTS Mobility