

# Warning Sign & Label Requirements

- ❑ Mark all items used to manipulate or store radioactive material.
- ❑ Label all contaminated items.
- ❑ Remove all radiation labels and warnings on containers that no longer contain radioactive material and are not contaminated.



# Warning Sign & Label Requirements University of Northern Iowa.

## ❑ Required Door Postings

- Laboratory Rules and Emergency Procedures
- Caution Radiation Area
- Caution X-Ray Radiation

# Warning Sign & Label Requirements

**MUST** be clearly visible, durable, and **MUST** state:  
**“CAUTION: RADIOACTIVE MATERIAL”**

Labels must provide sufficient information on the container to minimize exposure and to make sure all proper precautions have been taken.

- ❑ Radionuclide(s)
- ❑ Estimated activity
- ❑ Date



# Warning Sign & Label Requirements

Post in areas where radioactive materials may be used or stored.



Post in areas where radiation levels are  $\geq 5$  mrem per hour at a distance of 30 cm from radiation source or from any surface that radiation penetrates.

# Radioactive Waste Disposal

- ❑ Radioactive waste includes anything that contains or is contaminated with radioactive material.
- ❑ Radioactive waste is collected, processed, and disposed of by the Radiation Safety Officer in accordance with all State and Federal regulations.
- ❑ The Environmental Protection Agency regulates waste that is a radioactive hazardous chemical.

# Radioactive Waste Disposal

## Segregating Radioactive Waste

Waste must be separated into two categories based on the half-life of the material.

Short half-life is less than 90 days.  
Long half-life is more than 90 days.

# Radioactive Waste Disposal



## ❑ Hazardous Waste

- Place in proper containers
  - Ensure liquid waste is properly contained. Bags often leak.
  - Where possible do not mix aqueous/water waste with organic liquid waste
- Containers should be closed except when adding waste and secured when not in use
- Avoid overfilling containers. Leave about 3 inches at the top of the container.
- Ensure waste is properly identified with radioactive waste label. Ensure it is completely filled out and legible. Outer containers must also be labeled. Must be filled out in ink or a computer label (Incomplete or penciled labels will not be accepted)
- Mixed waste must be properly identified.
  - Whatever is in the container better be on the waste label type of scintillation fluid etc.)

# Radioactive Waste Disposal

- UNI Safety Office provides tags for identifying contents of radioactive waste.
- You will need to know:
  - Identity of the radionuclide and its activity
  - Dry waste activity: estimate about 10 - 20% of activity used in the experiment to end up as solid waste
  - Liquid waste activity: calculate by counting a sample of the waste in a liquid scintillation counter or a gamma counter



# Radioactive Waste Disposal

## ☐ Check for Contamination

- Perform a wipe test on the entire external surface of the radioactive waste container to check for contamination prior to pick-up.
  - Count the wipe in an liquid scintillation or gamma counter.
  - If the result is greater than 22 dpm/cm<sup>2</sup>, then decontaminate, re-wipe, recount.
  - If the result is less than 22 dpm/cm<sup>2</sup>, then the container is ready for pick-up. A pick-up time must be arranged with the RSO.

# Radioactive Waste Disposal

Waste must also be separated by classification.  
Different types of waste have different disposal methods.

- ❑ Aqueous and Organic Liquid Waste
- ❑ Animal Carcass Waste
- ❑ Dry Waste
- ❑ Liquid Scintillation Vials
- ❑ Radioactive Sharps Waste
- ❑ Source Vials

# Radioactive Waste Disposal

- ❑ Material that is past the 10 half lives requirement and no longer considered as radioactive waste
  - Radiation labels need to be defaced
  - Waste should be double bagged in regular thick garbage bags (15 mils)
  - Should not be touched by Custodial Staff.
  - Sharps need to be in suitable containers.

