

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

- 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 ≥ 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/cm², then decontaminate, re-wipe, recount.
 - ❖ If the result is less than 22 dpm/cm², then the container is ready for pick-up. A pick-up time must be arranged with the RSO.

Radioactive Waste Disposal Classifications

**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 is not considered a hazardous 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.