

DISPOSAL OF RADIOACTIVE WASTE

GENERAL CONSIDERATIONS

Unless specifically authorized by the Radiation Safety Committee, no radioactive materials shall be disposed of directly into any sanitary sewer system.

Radioactive wastes shall not be placed into the cold trash (non-radioactive waste).

Radioactive wastes shall not be stored for decay by Permit Supervisors.

Shipping containers (cardboard boxes) may be placed in the cold trash if all shipping labels have been removed and a survey of the container indicates no removable or embedded contamination.

All radioactive wastes shall be collected in suitable containers provided or authorized by the Department of Environmental Health and Safety. Containers shall not be removed from the restricted area. All containers must be labeled with a "Caution Radioactive Material" sign.

The Department of Environmental Health and Safety will collect radioactive wastes from user facilities.

The Department of Environmental Health and Safety may not pick up any radioactive waste which is not properly labeled in accordance with the regulations of this section.

Any accidental releases of radioactive wastes, into the environment must be reported immediately to the Department of Environmental Health and Safety.

If wastes are not segregated as required, the Department of Environmental Health and Safety may levy a separation charge against the responsible party or require the responsible party to segregate the waste.

When unusual problems of disposal arise, the Department of Environmental Health and Safety shall be consulted to establish a satisfactory procedure.

SOLID DRY WASTE

Definition: paper, pipettes, glassware, gloves, polyethylene or absorbent paper work coverings, bottles, dry scintillation vials containing no fluids.

Dry waste is collected in five gallon waste cans provided by the Department of Environmental Health and Safety. Other waste containers may be authorized by the Department of Environmental Health and Safety if proper signs are placed on the containers. Solid waste must be segregated by isotope into different cans.

LIQUID SCINTILLATION VIALS (LSV)

Definition: plastic or glass vials which contain liquid scintillation cocktail.

The containers for LSVs are the same type used for solid waste. Disposal regulations and processing requirements require LSVs be segregated as follows:

- Vials containing H-3 and/or C-14 and less than 0.05 microcuries per gram of media.
- All others.

LIQUID WASTES

Definition: aqueous wastes containing radioactive material without a chemical or biological hazardous constituent.

The Department of Environmental Health and Safety provides polyethylene jugs for liquid waste. The cap to the jugs must be screwed on at all times except when adding waste. All liquid containers shall be kept inside plastic trays or other secondary containment to contain spillage or leaks. "Mixed" waste shall not be placed into these containers.

"MIXED" WASTE (e.g. corrosives, flammables, toxic, reactives)

Definition: wastes containing radioactive material that also contains a chemical hazardous constituent.

"Mixed" waste must be stored in a separate container from all other radioactive wastes. Containers must be selected that are compatible with the chemical within and must also be labeled with the hazardous chemical constituent(s) as well as the radioactive contents. Sometimes the chemical hazard can be eliminated, e.g. neutralization of acidic or basic solutions. Consultation with the Department of Environmental Health and Safety is highly recommended.

GASEOUS AND AIRBORNE WASTES

In cases where releases of volatile radioactive products or radioactive aerosols are anticipated, means shall be provided to trap such materials (either by chemical or physical methods, e.g. a phenylethylamine trap for $^{14}\text{CO}_2$ or activated charcoal trap for radioiodine). The resulting product may then be handled as liquid or solid dry waste, whichever is appropriate. If trapping is not practicable, contact the Department of Environmental Health and Safety for other options.

BIOLOGICAL WASTES

All animal carcasses and other biological wastes shall be double bagged in a freezer until collection by the Department of Environmental Health and Safety. The bags shall be labeled with radioactive warning tape and marked with the name of the isotope, the date, and the activity of the waste. The freezer shall be labeled with a radioactive warning sign.

PROCEDURE FOR COLLECTTON

To arrange for a waste collection, submit the on-line webform, EHS: Radioactive Waste Pick-up Form, at www.udel.edu/webforms . For questions, contact the Department of Environmental Health and Safety, extension 8475. The following information must be provided: Permit Supervisor's name, room and building, container size, type of waste, isotope and activity.