DRY, LIQUID, AND LIQUID SCINTILLATION RADIOACTIVE WASTE PROCEDURES

University of Central Florida
Department of Environmental Health & Safety
www.ehs.ucf.edu

Dry Waste Disposal

DEFINITION: Radioactively contaminated solid materials containing no free standing liquids.

EXAMPLES: Paper, plastics, microcentrifuge tubes, glassware, empty stock vials, and gloves. **(empty and free of liquid)**

STORAGE

1. Waste containers must be:

- ❑ Distinctly different from normal trash receptacles.
- ❑ Constructed of sturdy, permanent materials (either plastic or heavy cardboard).
- ❑ Lined with a plastic bag (3 mil thickness) appropriate for radioactive waste disposal.

- ❑ Marked "Caution-Radioactive Material" on the top and side.
- ❑ Identified by isotope
- ❑ Closed when not in use.

2. Solid radioactive waste shall be:

- ❑ Segregated by isotope (^{14}C and ^{3}H can be combined).
- ❑ Shielded, as necessary.
- ❑ Waste placed in container is free of radiation symbols and markings. (**either deface or remove**)

3. Prohibited items:

- ❑ Lead and other Hazardous Materials.
- ❑ Biohazardous materials.
- ❑ Free Standing Liquid
- ❑ "Sharps" (unless placed in a puncture resistant container).
- ❑ Outer source containers "pigs" and source vials. Collect these separately for disposal by EH&S.

Liquid Waste Disposal

DEFINITION: Liquids containing quantities of radioactive material classified into two main categories:

1. Aqueous Radioactive Liquid

2. Mixed Radioactive Liquid (chemically hazardous and radionuclide).

STORAGE

1. Liquid waste must be contained as follows:

- ❑ Within thick, plastic containers.
- ❑ Do not fill > 90% capacity.
- ❑ Stored and transferred within a secondary container. The secondary container volume must exceed the waste container volume.
- ❑ Marked "Caution-Radioactive Material" on the primary container along with liquid chemical contents in plain nomenclature.
- ❑ Identified by isotope.
- ❑ Authorized user on the waste disposal tag.
- ❑ Capped at all times when not in use.

2. Liquid radioactive wastes shall be:

- ❑ Segregated by isotope (^{14}C and ^{3}H can be combined).
- ❑ Shielded, as necessary and materials must be neutralized/sterilized prior to disposal.

3. Prohibited items:

- ❑ Hazardous Materials-contact RSO for procedures
- ❑ Liquid with a pH<5 or >9.
- ❑ Animal Tissue, Solid Waste, Pipette tips, etc.
- ❑ Biohazardous materials

NOTE

Sink Disposal is authorized on a case by case basis and all inquiries should be directed to the RSO for further information.

For radiation waste pickup please visit:
https://ehs.fs.ucf.edu/EHSAWeb/EHSAWebISAPI.dll

Liquid Scintillation Waste Disposal

STORAGE

1. **All liquid scintillation waste must be collected and stored by isotope if it exceeds <u>3 times the background rate</u>.**
2. **Liquid scintillation waste must be contained as follows and can be permissible under 2 methods:**

A) For large quantity generators of radioactive samples you shall keep the samples within the vials and store in a large plastic drum provided by EH&S.

B) For smaller quantities of radioactive samples you shall empty the cocktail into the appropriate isotopes liquid radioactive waste storage container. The empty vials with swipes will go into separate dry waste containers segregated by isotope.

- ❑ Do not fill > 90% capacity.
- ❑ Marked "Caution-Radioactive Material" on the primary container.
- ❑ Authorized user on the waste disposal tag.
- ❑ Capped at all times when not in use.

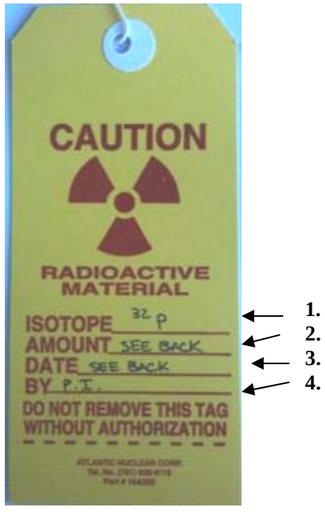
3. Liquid scintillation radioactive wastes shall be:

- ❑ Segregated and identified by isotope.
- ❑ Shielded, as necessary, materials must be neutralized/sterilized prior to disposal.
- ❑ Treated as their respective radioactive liquid waste if transferred into a liquid waste container.

Waste Disposal Tag

Filling out the waste disposal tag:

1. Isotope used.
2. Activity using back side with Running Total and date additional material was added. (full containers should have summed activity)
3. Date
4. Authorized user: PI



Outer Source Containers (Pig) must be kept separate from regular dry radioactive waste. In addition **ALL** source containers must be returned to Environmental Health & Safety for disposal.