

RULES FOR PACKAGING RADIOACTIVE WASTE (RC-040)

Packaging of radioactive waste must be done as described below. Every effort should be made to **minimize radioactive waste volume**. Always take extra care to package waste properly to ensure that spills and the spread of contamination are prevented.

Radioactive waste (RAM waste) segregation criteria:

Separate waste by **Radionuclide (if experimentally possible)**:

- Short-lived RAM ($t_{1/2} \leq 120$ days) separated from long-lived RAM ($t_{1/2} > 120$ days).
- H-3 and C-14 animal carcasses and scintillation vial waste separated from all other radionuclides.
 - Deregulated Waste: animal carcass or scintillation cocktail with activity $< 50\text{nCi/g}$ or nCi/l .
 - Regulated Waste: animal carcass or scintillation cocktail $> 50\text{nCi/g}$ or nCi/l .
- Uranium and Thorium separated from each other and from other RAM materials.

Separate waste by **Physical Form**:

- Dry waste separated from all other waste forms.
- Scintillation vials and bulk cocktail separate from each other and all other waste forms.
- Animal bodies separate from biological waste and dry waste
- Aqueous (Inorganic) liquids separate from mixed (Organic) liquids (if experimentally possible) per online Radioactive Liquid Waste Segregation list.
- Metals separate from all other RAM Waste.
- Uranium and thorium separated by differing compounds (natural, nitrate, or acetate).

RAM Waste packaging acceptance guidelines

- **Glass containers, thin-walled plastic containers (milk jugs, soda pop bottles and bleach bottles), leaking containers and unpackaged yellow poly bags containing any glass, loose scintillation vials, liquids and/or exposed sharp objects will not be accepted.**
- Waste containers may not weigh more than 50lbs.
- Plastic containers must be chemically compatible with liquid waste chemistry and pH to prevent leakage or loss of integrity .
- Do not process liquid waste as dry waste by use of absorbents.
- Each container must be **tightly secured** so that the contents cannot be dispersed (using fiber reinforced or duct tape, tightened screw caps, properly sealed lids, etc.) before pickup. (Various radioactive material 'caution' or masking tapes are not acceptable for securing packages.)
- Each container must be labeled with **2 Waste Classification Labels (labels should be placed 180° apart or on opposite sides of the container)** during collection and a **Radioactive Waste Summary (RC-090)** prior to requesting a waste pickup.
- The Radioactive Waste Summary must include all Radioactive Material Receipts (RMR's) contained in the RAM waste container. Instructions for completing the Radioactive Waste Summary are on the RCO website. (www.radcon.arizona.edu)
- **ALL PATHOGENIC or INFECTIOUS MATERIALS must be deactivated** prior to pickup (collection by the RCO), in accordance with the specific authorized protocol. Solid waste contaminated with ^{35}S , ^{125}I or ^{131}I may be difficult to safely deactivate due to radioactive vapor generation, resulting in airborne hazards and/or inadvertent equipment contamination. **ANY QUESTIONS REGARDING DEACTIVATING INFECTIOUS MATERIALS SHOULD BE DIRECTED TO THE INSTITUTIONAL BIOSAFETY COMMITTEE AT 621-3441**

Radioactive Sealed Source Disposal: Contact RCO office at 626-6850 for assistance with any of radioactive sealed source disposal, recycling, or return to vendor.

WASTE TYPE	ACCEPTABLE CONTAINER	
	Sharps and glass	Non-Sharps dry waste
Dry Waste	~ Thick-walled plastic containers with screw tops ~ Sharps containers ~ Heavy cardboard boxes lined with yellow poly bag. Exterior surface of the box must be labeled " Sharps " boldly written on two sides in clear view.	~ Yellow poly bags ~ Heavy cardboard boxes with a poly bag liner.
Liquid Waste • Inorganic (aqueous) liquids • Organic (Mixed) Liquids • Bulk scintillation cocktail	~ Sealed plastic pails with pull rings intact. ~ Leave at least 2" free space (air) at top. ~ Thick-walled plastic containers with tight-fitting screw tops. ~ Cubitainers (plastic bladder in heavy cardboard box). ~ Scintillation cocktail may NOT contain pathogenic materials.	
Scintillation Vials ** For bulk scintillation cocktail, please see liquid waste guidelines.	Stored upright in tray	Stored out of tray (loose)
	~ Multiple trays in a heavy cardboard box lined with a yellow poly bag ~ Yellow poly bag (single trays only)	~ Plastic pails ~ Yellow poly bag lined box if >25 lbs.
Animal Bodies • Entire Carcasses • Tissues and organs	~Yellow poly bags (double-bagged). <25 lbs. ~Yellow poly bags (double-bagged) placed into a heavy cardboard box. >25 lbs.	
Biological Waste • Excreta • Body Fluids • Tissue and Cell cultures	~Yellow poly bags (double-bagged) <25 lbs. ~Thick-walled plastic container with tight fitting screw top. ~Sealed plastic pails with pull ring intact. ~Heavy cardboard boxes lined with yellow plastic bag >25 lbs.	

1) Materials that are useful in processing RAM waste and available from University stores can be located on the RCO website.

2) Waste Classification Labels can be ordered from RCO while requesting a pickup online.

3) The Radioactive Waste Summary (RC-090) and Instructions are available on the RCO website.

If you have questions, please call the Radiation Control Office at 626-6850.