

GuideSheet

Radioactive Waste Disposal

Radioactive waste is one of the major waste streams from university operations (e.g., research labs, medical clinics, and construction). Strict regulations govern radioactive material and radioactive waste management. Failure to comply may result in fines from the state and/or termination of the university's radioactive material license.

Segregate radioactive waste into the following categories: Solids, Aqueous Liquid; Organic Liquid; Scintillation Vials Containing Unabsorbed Liquid, Sharps, Pathological Waste (e.g., animal carcasses), and Lead Pigs. Further segregate the radioactive waste according to radioisotope. Each radioisotope will have its own container.

EH&S provides all radioactive waste containers on campus. Each container illustrated on Page 2 is designated for a specific category of waste. **ALERT: DO NOT USE red biohazard bags for disposal.**



Solids

1. Collect solid waste into the appropriate waste containers. One isotope, one container.
2. **DO NOT** mix solid waste with liquid waste.
3. Ensure that each container has an adhesive radiation waste label attached.



Aqueous and Organic Liquids

1. **DO NOT MIX AQUEOUS** radioactive liquid waste with **ORGANIC** radioactive liquid waste.
2. Decant each radioisotope liquid waste into its own EH&S-provided liquid container.
3. Cap liquid container tightly after each use.
4. Mark the Date and Radionuclide on each bottle.
5. Place the liquid container in a secondary container to prevent accidental spills or leakage.



Vials Containing Unabsorbed Liquids

- Place vials with scintillation cocktails in drum. **DO NOT** include other solid waste with the vials.



Sharps

1. Fill sharps container to the Capacity Line. **DO NOT** exceed the line.
2. Close cap when full.
3. Label sharps container with an adhesive sticker that reads "Radioactive Material".



WHAT I NEED TO DO

- Only use EH&S-provided containers for radioactive waste disposal. One isotope, one container.
- Wear appropriate personal protective equipment when handling radioactive waste.
- Questions? Contact radsafety@usc.edu.

Pathological Waste

- Place frozen animal carcasses and tissue samples in brown paper bags and keep in freezer until waste pick-up is arranged. The freezer is considered a container for EHSA records.



Lead Pigs

- Segregate from regular radioactive waste for special pick up.

Update Inventory/Request Waste Pickup via EHSA

1. Log into the EHSA online inventory to update waste container content information.
2. Seal the container(s), perform a contamination survey, and record contamination survey results.
3. Print two (2) copies of the EHSA waste report. Keep one for lab records; attach the other to the waste container.
4. Follow instructions in the [EHSA SOP: Radioactive Waste Management](#) document.
5. Once rad waste container/content is picked up, create a new container number for new waste container in EHSA.

Remember:

- **DO NOT** commingle dry waste with vials.
- **DO NOT** fill liquid containers completely. Leave enough head space to allow for expansion.
- **DO NOT** mix aqueous with organic liquid rad waste.
- **DO NOT** exceed the "fill line" of sharps containers.
- **DO NOT** pour radioactive liquids down the sink for disposal.



REFERENCES

[US NRC Title 10 Part 20 - Standards for Protection Against Radiation](#)

[Radiation Safety Manual](#): Chapter 8 – Radioactive Waste Management and Disposal



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CONTAINERS FOR RADIOACTIVE WASTE DISPOSAL

All radioactive waste must be segregated according to the following categories. **NOTE:** Different isotopes cannot be mixed in the same container. To arrange for rad waste pickup, follow instructions in the [EHSA SOP: Radioactive Waste Management](#) document.

HSC

UPC

Solids

- Petri dishes
- Glass tubes
- Plastic pipette tips
- Gauze, paper towels, plastic-backed absorbents or bench coat, etc.
- Contaminated gloves and other personal protective equipment.
- Waste from cages where animals injected/infused with radionuclides are housed.
- Plastic pipettes
- Culture vials
- Plastic Vacutainer tubes



Aqueous and Organic Liquids

- Liquids must be in non-breakable and compatible containers provided by EH&S.



Vials Containing Unabsorbed Liquids

- Liquid scintillation cocktail in vials only. DO NOT dispose of dry material in container.

Regulated Vials (RV)

P-32; Si-32; P-33; S-35; Cl-36; Cr-51; I-125

De-Regulated Vials (DRV)

C-14; H-3



Sharps

- Needles
- Razor blades, scalpels
- Any contaminated material that can puncture/penetrate the skin or Red Bag.
- Microscope slides
- Glass pipettes



Pathologicals

- Keep frozen animal carcasses or tissues from animals injected/infused with radionuclides prior to sacrifice.
- Place carcasses/pathological tissues in brown paper bags; **DO NOT** use sealable plastic bags. Keep in freezer until ready for pickup.



Lead Pigs

- Segregate from regular radioactive waste for special pick up.

