

# RADIOACTIVE WASTE GUIDE

## 1. Segregate Waste By Half-Life

### Short Lived ( $T_{1/2} < 120$ days)

F-18, P-32, S-35, Cr-51, Tc-99m, I-125, etc.

### Long Lived ( $T_{1/2} > 120$ days)

H-3, C-14, U, Th, etc.

If an experiment involves mixing short and long lived radionuclides, then all waste should be placed in the "long-lived" category.

## 2. Segregate Waste By Material Category

After segregating by half-life, waste must be sorted by the physical and chemical form into the categories listed below. Do not mix different categories together. All waste containers must be properly marked as Radioactive Waste.

**NOTE:** For Short-Lived waste, you must obliterate or remove all radioactive material labels, stickers, and markings on items before putting them into the waste container.

### A. Sharps

#### DO:

- Needles (must go in plastic sharps container)
- Glass and plastic pipettes, tips, and Pasteur pipettes
- Glassware
- Razor blades, etc.
- Glass ampules

#### DON'T:

- Lead
- Liquids
- Animal waste

#### Packaging:

Plastic sharps container or plastic bag in cardboard box



### B. Dry Solids

#### DO:

- Dry, solid material
- Gloves, diaper paper
- Empty plastic LSC, centrifuge, or stock vials

#### DON'T:

- Lead
- Liquids
- Animal, biological material
- Sharps, glass
- Hazardous chemicals
- Glass or plastic pipettes/tips

#### Packaging:

Clear, heavy duty, plastic bag



### C. Animal/Biological

#### DO:

- Frozen animal carcasses, parts
- Excreta, bedding, tissue, blood
- Separate animals from other bio waste
- < 10 kg (22 lbs) per package

#### DON'T:

- Unfrozen animals
- > 10 kg (22 lbs) per package
- Mix with other waste forms (sharps, dry solid, etc.)

#### Packaging:

Clear, heavy duty, plastic bag or cardboard box



### D. NHNT Liquids

#### (Non-Hazardous, Non-Toxic)

#### DO:

- NHNT liquids, including full LSC vials or cocktail (e.g., Optifluor)
- Bulk liquid or full vials
- Separate "hot" and "cold" vials

#### DON'T:

- Mix with hazardous, toxic, or flammable liquids
- Dispose of any full LSC vials or cocktail in regular trash or drain

#### Packaging:

Full vials in cardboard trays in original box (preferred) or in clear, heavy duty bag; liquid in bulk container provided by Radiation Safety (emptied plastic vials in dry waste or glass vials in sharps)



### E. Flammable, Hazardous, or Toxic Liquids

#### DO:

- Avoid or minimize creating "mixed" hazardous and radioactive waste
- Toluene, xylene, hexane, etc.
- Acids, bases, Hg, Pb, etc.
- Separate flammable from non-flammable liquids

#### DON'T:

- Dispose in regular trash or drain
- Mix with NHNT liquids

#### Packaging:

Full vials in trays in original box (preferred) or in clear, heavy duty bag; liquid in bulk container provided by Radiation Safety



## 3. Arrange for Waste Pickup

1. Make sure waste is properly segregated and packaged, as described above
2. Securely close and survey each package
3. Complete a waste tag for each package
4. Schedule a waste pickup on-line (see [www.rso.utah.edu](http://www.rso.utah.edu) for instructions)



**RADIATION SAFETY**  
THE UNIVERSITY OF UTAH

Questions? Contact Radiation Safety at (801) 581-6141, or see information at [www.rso.utah.edu](http://www.rso.utah.edu)

Revised April 2018

## Completing a Waste Tag

Each individual waste package must be accompanied by a complete and legible waste tag affixed to the package. The waste tag must be completed in pen, legible on all 3 copies, and signed and dated by the preparer. Waste with missing, incomplete, or illegible waste tags will not be picked up.

No 58759

### CAUTION - RADIOACTIVE WASTE

ONLY ONE MATERIAL CATEGORY ALLOWED PER PACKAGE!  
KEEP LEAD CONTAINERS SEPARATE FROM WASTES!

DRY, COMPACTIBLE, SOLID WASTE

SHARPS (NEEDLES, PIPETS, ETC.)

ANIMAL OR OTHER BIOLOGICAL WASTE

NON-HAZARDOUS, NON-TOXIC AQUEOUS LIQUID

FLAMMABLE, HAZARDOUS OR TOXIC LIQUID

TOXIC OR HAZARDOUS, NON-FLAMMABLE LIQUID

OTHER MATERIALS (DESCRIBE BELOW)

**FOR LIQUIDS:**

Mini  Standard

Bulk container: \_\_\_\_\_ Gallon

Volume of contents: \_\_\_\_\_ Gallon

**DESCRIBE MATERIAL** - give names of ALL chemicals and fluors

If any constituent is a "HAZARDOUS MATERIAL" as defined by the EPA, complete and ATTACH a HAZARDOUS WASTE DESCRIPTION

**INCLUDES ACTIVITY** Circle Units

(A)   $\mu\text{Ci}$  (mCi)

(B)   $\mu\text{Ci}$  (mCi)

(C)   $\mu\text{Ci}$  (mCi)

**CHECK ALL APPLICABLE CATEGORIES:**

Long-lived, half-life > 120 days

Short-lived, half-life < 120 days

BETA-GAMMA Emitters

ALPHA Emitters or Mass > 204

**DOES THIS PACKAGE CONTAIN ANY "RADIOACTIVE MATERIAL" LABELS?** Circle one: Yes No

I certify under penalty of law that to the best of my knowledge this information is accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Name of Responsible User (print): \_\_\_\_\_

Prepared by: \_\_\_\_\_ Ready/Call-in Date: \_\_\_\_\_

**RADIOLOGICAL HEALTH USE ONLY:**

Acceptance Date: \_\_\_\_\_ By: \_\_\_\_\_

Compacted  Stored in bin  Emptied into bulk jug

Cremated  Absorbed or Solidified  Bostabilized

Crushed vials Container #: \_\_\_\_\_

Process Date: \_\_\_\_\_ By: \_\_\_\_\_

Shipped drum  Released liquid  Released solid short-lived

Released to EH&S  Released to ARC

Maximum Exposure Rate at Contact: \_\_\_\_\_ mfi/hr

Survey Instrument ID: \_\_\_\_\_ Calib. Date: \_\_\_\_\_

Disposal Date: \_\_\_\_\_ By: \_\_\_\_\_

RRP 13E (3/03)

Generator's Copy No 58759

Check the correct box for the type of waste

List:  
(A) Each radionuclide (H-3, P-32, S-35, etc.)  
(B) the total activity of each  
(C) the correct activity units ( $\mu\text{Ci}$  or mCi)

Sign and date the completed waste tag.

If LSC vials, circle either "Mini" or "Standard" size

For bulk liquids, indicate the volume of the container and waste amount (gallons)

Describe the material, including all known chemicals and fluors

Check all applicable decay characteristics

Indicate if the package contains any Radioactive Material Labels

Print the name of the Responsible User