

Guidelines to Adhering to Argonne's Waste Generation Requirements (i.e., instructions that are completely acronym-free)

You've generated waste. Now you need to:

1. Find a waste container.

- a. There are some in the wet lab – *i.e. glass or poly bottles or Ziploc bags.*
- b. Make sure the container material is compatible with the waste.
i.e. corrosives and sharps have special considerations.
- c. The container has to have a tight-fitting lid (not a lid that can just pop off).

2. Label the container with the following: (use pre-printed labels if available)

- a. Your name.
- b. The date the waste accumulation started.
- c. The waste contents.
 - i. This is the same as you will put on the Chemical Waste Log, in the "Constituents" section.
- d. Write "Non-hazardous waste" or "Hazardous waste," as applicable.
 - i. How do I know if it's hazardous or not? (as defined by US law, which is what is relevant here) → See the next page of this document.
- e. If it is "Hazardous waste," write the Environmental Protection Agency's listing code (F, K, P, or U), or "ignitable," "corrosive," "reactive," or "toxic," as applicable. → See the next page of this document.
 - i. F-K-P-U Searchable database can be found here and on next page:
<https://www.epa.gov/hw/defining-hazardous-waste-listed-characteristic-and-mixed-radiological-wastes#PandU>

3. Add the waste to the container.

- a. Update the contents list whenever you add additional waste – make sure all waste is compatible!
- b. Stop filling when the container is about 80% full.
- c. Do not mix liquids with solid waste (residue only).

4. Duplicate all this information on the Chemical Waste Log.

- a. At the end of the beamtime, follow the *Chem Waste Log Guidance* to fill out the Waste Log and email the pdf **e-form** to Ray at rziegler@anl.gov along with the Safety Data Sheets (SDS) for the constituents of the waste.

How do I know what's considered "Hazardous Waste" or "Non-hazardous waste"?

Hazardous Waste:

- The waste is on one of the Environmental Protection Agency's four hazardous waste lists (**F, K, P, and U lists**, referred to as "Listed Hazardous Waste")

Hazardous Waste Classification	Examples	EPA Listing
Nonspecific source hazardous wastes	methylene chloride, TCE	F
Specific process hazardous wastes	wood preservation, pigment mfg. sludges	K
Acutely toxic discarded chemicals Potential injury/death with only small exposures; IDLH	arsenicals, cyanides	P
Toxic discard chemicals Carcinogenic, mutagenic, teratogenic; toxic, but not IDLH	acetone, creosote	U



AND/OR

- The waste is considered "**ignitable,**" "**corrosive,**" "**reactive,**" and/or "**toxic**" (referred to as "Characteristic Hazardous Waste")

Characteristic	Hazardous Waste Number
 Ignitable (Flash point < 140 degrees F)	D001
 Corrosive (pH ≤ 2.0 or ≥ 12.5)	D002
 Reactive (normally unstable) <small>water rx, forms explosive mixtures with water, generates toxic gases, cyanide or sulfide bearing waste, capable of detonation, Department of Transportation DOT Class A or Class B explosive or forbidden explosive</small>	D003
 Toxic (determined by Toxicity Characteristic Leaching Procedure analysis) <small>8 metals, 7 pesticides/herbicides, 25 other organic compounds</small>	D004-043

It is highly likely that you have already determined this for the ESAF. Check your ESAF to see if you have indicated "Y" for the "Toxic," "Flammable," "Corrosive," or "Oxidizer" categories.

Waste mixtures

- Any amount of **F, K, P, U waste** combined with something else is still **always considered "Hazardous Waste."**
- "**ignitable,**" "**corrosive,**" "**reactive,**" or "**toxic**" waste combined with something else that's "Non-hazardous" **may or may not still be "Hazardous,"** depending upon whether the characteristic is still present. For example, a corrosive waste with a pH of 1.0 (<2.0) is combined with a non-hazardous waste as it is being used. If the resulting pH of the mixture is >2.0 it is no longer considered hazardous. (NOTE: You cannot dilute waste simply to remove a characteristic hazard.)

Non-Hazardous Waste:

- Anything that is not in the "Hazardous" category described above.