

NJIT

New Jersey Institute  
of Technology

# **New Jersey Institute of Technology (NJIT)**

## **Guidelines for the Management of Regulated Chemical Waste**

April, 2018  
NJIT EHS Department

# Hazardous Waste Characterization

- Each experiment conducted in an NJIT laboratory has the potential to generate regulated chemical waste.
- Federal EPA and State DEP laws regulate how chemical waste may be managed. These laws are referred to as RCRA.
- NJIT has adopted the Satellite Accumulation Area (SAA) method for chemical waste management.
- Since the lab worker, student, faculty member (e.g., those performing the experiment) know all the chemicals involved in the protocol – the lab worker is in the best position to describe the ingredients of the waste chemicals.
- This is called generator knowledge – the person who generates the waste is responsible for labeling it properly and listing its ingredients. Generator knowledge is used to characterize chemical waste and to avoid generating unknown materials.

# Hazardous Waste Characterization

- In order for a waste material to be defined as Hazardous Waste, it can either be a listed waste or a characteristic waste; meaning it can either be on one of the EPA's lists or exhibit one of four recognized characteristics:

## Listed Waste

- F List – non-specific source waste (includes spent solvents)
- K List – specific source waste (industry specific)
- P List – acutely hazardous unused discarded commercial products
- U List – toxic unused discarded commercial products
- State List – specific chemicals/products listed by the State

## Characteristic Waste

- Ignitability (flash point  $< 140^{\circ}$  F) D001
- Corrosivity (pH  $< 2$  or  $\geq 12.5$ ) D002
- Reactivity (unstable, explosive, capable of detonation, react violently with water, generate cyanide or sulfide fumes) D003
- Toxicity (contains certain regulated constituents) D004 to D043

# Satellite Accumulation Areas (SAA)

- Each lab or group of labs has a waste accumulation area where hazardous chemical waste is maintained in the lab before it is picked up by the Environmental Health and Safety (EHS) department.
- The SAA is a group of plastic bins where individual containers of chemical waste are placed to await pick up.
- Each bin is dedicated to one compatible waste stream. The bins serve physical barriers between potentially incompatible waste streams.
- So if your lab protocol uses flammable liquids, acids, and bases (for example), this lab will need 3 bins – one dedicated to each waste stream described above.
- The EHS department posts signs and posters designating the SAA for each laboratory – see the following pictures:

# Satellite Accumulation Areas (SAA)



In this example the SAA has been set up to accommodate 3 separate waste streams – flammable, acid, and base.

# The SAA Poster Identifies Each Waste Accumulation Area.

## SATELLITE ACCUMULATION AREA - HAZARDOUS WASTE



Prepare  
Waste  
Area

- Maintain your designated waste collection area at or near the site of generation
- Display this sign close to the collection area
- All liquid waste must be stored inside a secondary container when there is risk of breakage



Accumulate  
Waste

- Attach a Chemical Waste Label to each waste container
- Label all chemical contents using full chemical names (No abbreviations, chemical formulas or molecular structures)



Request  
Pickup

- Submit a waste removal request form via the Environmental Health and Safety Website under EHS Forms: <https://www5.njit.edu/environmentalsafety/>
- Waste container request forms can also be accessed from the site
- All waste containers must be properly labeled before the waste can be removed



Work  
Safely

- Segregate incompatible materials (Acids/Bases, Flammables/Oxidizers, etc.)
- Follow your laboratory's written standard operating procedures (SOP)
- Wear PPE (lab coats, safety glasses, and appropriate gloves) at all times in the lab
- Shorts and open toe shoes are prohibited in the lab

Contact NJIT Environmental Health and Safety at  
(973) 596 3059 or [healthandsafety@njit.edu](mailto:healthandsafety@njit.edu)



SAA Guidelines are posted in each lab where a chemical waste accumulation area has been established.

These guidelines remind the waste generators of some of the main rules concerning hazardous waste management in NJIT labs.

## **Satellite Accumulation Areas (SAA) Guidelines**

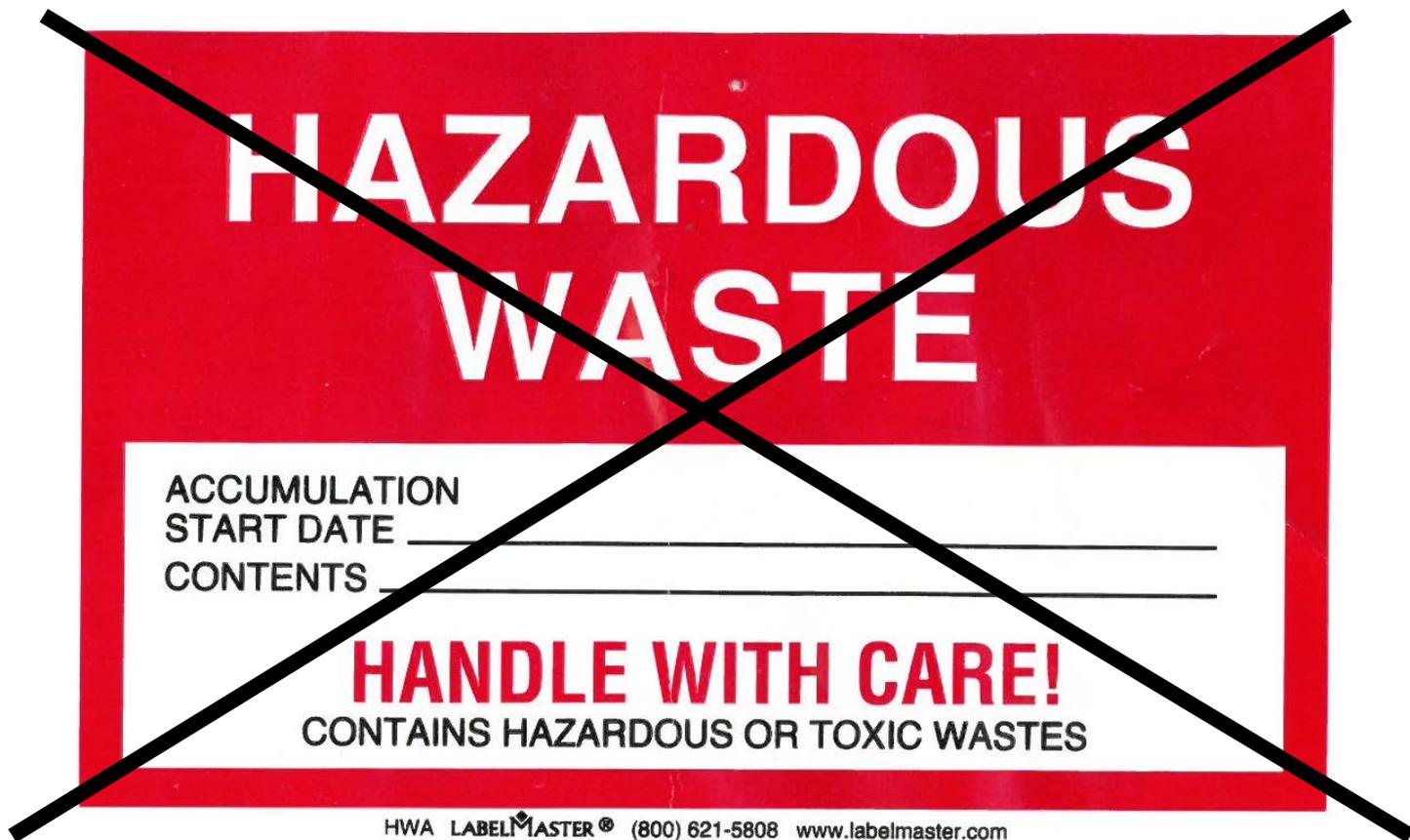
- Hazardous waste must be stored only in the laboratory's designated Satellite Accumulation Area (SAA)
- The waste labels are to be filled out completely – include Lab Contact Information
- Write the full name of all the chemical components and the approximate percentage of each substance. Total should equal 100%.
- The SAAs in a laboratory must accommodate all waste streams generated by the laboratory
- Within the SAAs incompatible waste types are separated by a physical barrier
- SAA is located at or near the point of generation (e.g., in the lab)
- SAA is under the control of the person generating the waste
- Hazardous waste must be segregated by waste type – all incompatibles, including flammables, oxidizers, poisons, acids, and alkalis must be stored separately
- Each SAA is limited to one waste stream or compatible waste streams
- Each lab or shop will have designated individuals responsible for hazardous waste management
- The designated individuals will be:
  - Knowledgeable about the waste generated by the laboratory or shop operations;
  - Familiar with the NJIT Waste removal procedures;
  - Current with all mandatory laboratory and shop safety trainings; and
  - Familiar with applicable NJIT emergency response procedures.

# Chemical Waste Labeling

- Each container of chemical waste needs to be properly labeled with the red and white NJIT Hazardous Waste label.
- Labels must be filled out correctly and completely.
- Complete chemical names must be written in English with no abbreviations and no chemical or molecular formulas.
- For mixtures, each component must be listed with approximate percentages (components must total 100%).
- Lab contact information must also be included.
- It is not necessary to date containers. Container dating refers to the date that the chemical waste is removed from the lab by the EHS department.

# Chemical Waste Labeling

This was the old Hazardous Waste label used by NJIT in the past. This label is no longer compliant and should not be used. If you have these labels in the lab, return them to EHS.



# Chemical Waste Labeling

This was the revised NJIT Hazardous Waste label that was compliant until the US EPA and NJ DEP changed the labeling requirements in the Spring of 2017.

List chemical components of the waste and percentages here

Check all that apply

Fill in lab contact information

**HAZARDOUS WASTE**

**NJIT**  
University Heights  
Newark, NJ 07102

Waste Removal Date \_\_\_\_\_

Chemical Contents (Please describe all waste contents using full chemical names without abbreviations, chemical formulas or molecular structures)

\_\_\_\_\_ % \_\_\_\_\_ %  
\_\_\_\_\_ % \_\_\_\_\_ %  
\_\_\_\_\_ % \_\_\_\_\_ %  
\_\_\_\_\_ % \_\_\_\_\_ %  
\_\_\_\_\_ % \_\_\_\_\_ %

**CHECK ALL THAT APPLY**

Organic                       Liquid/Solid Mixture                       Oxidizer  
 Inorganic                       Flammable                       Poison  
 Solid                       Corrosive:    [ ] Acid    [ ] Base                       Carcinogen  
 Liquid                       Reactive                       RCRA Metal  
 Specific Storage Characteristics (e.g. air, water, shock reactive, etc.): \_\_\_\_\_

Principal Investigator \_\_\_\_\_ Telephone # \_\_\_\_\_  
Lab Manager \_\_\_\_\_ Email \_\_\_\_\_  
Building \_\_\_\_\_ Room # \_\_\_\_\_

# Chemical Waste Labeling

This is the new and compliant NJIT Hazardous Waste label. Beginning in the Spring of 2017 no other Hazardous Waste Labels should be used.

List chemical components of the waste and percentages here

Check all that apply

Fill in lab contact information

HAZARDOUS WASTE			
		Waste Removal Date _____	
Chemical Contents (Please describe all waste contents using full chemical names without abbreviations, chemical formulas or molecular structures)			
_____ %	_____ %	_____ %	_____ %
_____ %	_____ %	_____ %	_____ %
_____ %	_____ %	_____ %	_____ %
_____ %	_____ %	_____ %	_____ %
Check All That Apply:			
<input type="checkbox"/> Ignitable	D001	Flammable, combustible	
<input type="checkbox"/> Corrosive	D002	Acids, bases	
<input type="checkbox"/> Reactive	D003	Oxidizers, pyrophorics, polymerizables	  
<input type="checkbox"/> Toxic	(D004-D043)	Metals, high concentrations	
<input type="checkbox"/> Acutely Hazardous	(P023-P205)	Other: _____	
Principal Investigator _____		Telephone # _____	
Lab Manager _____		Email _____	
Building _____		Room # _____	

New NJIT hazardous waste label – Compliant with changes to the RCRA statute that requires hazard classification on the label.

# HAZARDOUS WASTE

**NJIT**

University Heights  
Newark, NJ 07102

Waste Removal Date \_\_\_\_\_ EHS USE ONLY

Chemical Contents (Please describe all waste contents using full chemical names  
without abbreviations, chemical formulas or molecular structures)

_____ %	_____ %
_____ %	_____ %
_____ %	_____ %
_____ %	_____ %

**Check All That Apply:**

- |  |             |  |   |
|--|-------------|--|---|
| <input type="checkbox"/> Ignitable         | D001        | Flammable, combustible                 |    |
| <input type="checkbox"/> Corrosive         | D002        | Acids, bases                           |    |
| <input type="checkbox"/> Reactive          | D003        | Oxidizers, pyrophorics, polymerizables |    |
| <input type="checkbox"/> Toxic             | (D004-D043) |  |    |
| <input type="checkbox"/> Acutely Hazardous | (P023-P205) |  |   |

Principal Investigator \_\_\_\_\_

Telephone # \_\_\_\_\_

Lab Manager \_\_\_\_\_

Email \_\_\_\_\_

Building \_\_\_\_\_

Room # \_\_\_\_\_

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# Container Management

- Store containers of hazardous waste in the lab's designated SAA.
- Containers must be compatible with the waste being stored in them. For example, acid waste should not be stored in metal containers. Hydrofluoric Acid may not be stored in glass containers.
- Do not fill containers to the very top. Leave at least 1 inch of "head space" to allow contents to expand and contract.
- Containers must be in good condition.
- Lab personnel should monitor waste containers daily for signs of leaks or container deterioration.
- Containers must be properly capped. The only time a waste container should be open is when you are adding waste.
- When there is risk of breakage, containers must be stored in secondary containment (mostly applies to glass bottles).

NJIT WASTE REMOVAL REQUEST FORM

Lab Contact Information	Submittal Date: _____
Building: _____ Room: _____ Principal Investigator/Faculty: _____ Contact Information: _____	This date reflects the date waste was submitted to EHS for hazardous waste determination. This date does not represent the end of waste accumulation.
Special Instructions:	<b>FOR EHS USE ONLY:</b>

- Waste *will not* be removed unless the following requirements are met:**
- Every waste container should have a NJIT waste label with all contents listed. Every item including water, solvents, and solid waste should be included on waste label.
  - All waste container should be closed, sealed and in good condition.
  - The waste labels are to be filled out completely including lab contact information, full name of all the chemical components and the approximate percentage of each substance if known
  - If known, concentration percentages of each substance should equal 100%.
  - Waste should be stored in designated waste storage area/s only.

Type of Waste						
	<input type="checkbox"/> Chemical	<input type="checkbox"/> Biological/Medical	<input type="checkbox"/> Radiological	<input type="checkbox"/>	<input type="checkbox"/> Acutely Hazardous <sup>1</sup>	
#	Container Type:	Quantity/Size:	State of Contents:	Location of Waste:	Contents:	Hazard Type:
EX.	Plastic <small>(See NJIT Container Request Form)</small>	1/ 1 pint	Liquid <small>(Solid/ Liquid)</small>	Under Fume Hood <small>(Please be specific)</small>	Methanol, Water <small>(Please be specific)</small>	Flammable
1						
2						

Use the EHS Waste Removal Request Form to request a hazardous waste pick up from your lab.

This form is found on the EHS website.

Complete the form listing each waste container that you need removed.

E-Mail the completed form to:

[healthandsafety@njit.edu](mailto:healthandsafety@njit.edu)

<sup>1</sup> <https://www5.njit.edu/environmentalsafety/sites/environmentalsafety/files/Acutely%20Hazardous%20Waste%20%28P-Codes%29.pdf>

Use the EHS Waste Container Request Form to request replacement waste containers and labels for your lab.

This form is found on the EHS website.

Complete the form listing the number and type of containers that you need.

E-Mail the completed form to:

[healthandsafety@njit.edu](mailto:healthandsafety@njit.edu)



NJIT WASTE CONTAINER REQUEST FORM

Lab Contact Information	Submittal Date: _____
Building: _____ Room: _____ Principal Investigator/Faculty: _____ Contact Information: _____	This date reflects the date waste was submitted to EHS for hazardous waste determination. This date does not represent the end of waste accumulation.
Special Instructions:	FOR EHS USE ONLY:

**Waste Container Request**  
Please check all that apply. Indicate Size and Quantity needed. Ensure all containers requested are compatible with the waste materials being generated.  
Example: Corrosive Materials should not be stored in Steel drums regardless of concentration.  
Example: Liquids should never be stored in Fiber drums.

Plastic	Plastic	Plastic Screw-Top	Plastic	Steel	Plastic Drum Liner/Bag	Fiber Lined Biological Waste Box	Plastic Sharps Container	Fiber
Size/Quantity	Size/Quantity	Size/Quantity	Size/Quantity	Size/Quantity	Type/Quantity	Quantity	Size/Quantity	Size/Quantity
1 Pint Quantity Requested	1 Gallon Quantity Requested	5 Gallon Quantity Requested	30 Gallon Quantity Requested	30 Gallon Quantity Requested	30 Gallon Quantity Requested	Quantity Requested	Small Quantity Requested	15 Gallon Quantity Requested
1 Quart Quantity Requested	5 Gallon Quantity Requested				5 Gallon Quantity Requested	*Includes Red BioHazard Bag*	Large Quantity Requested	30 Gallon Quantity Requested
1 Gallon Quantity Requested					Small Ziplock Bag Quantity Requested			
Contents:	Contents: SOLIDS ONLY	Contents:	Contents:	Contents:	Contents:	Contents: SOLIDS ONLY	Contents: SOLIDS ONLY	Contents: SOLIDS ONLY



Please check all labels needed and quantity requested

# Questions?

Contact EHS with questions concerning hazardous waste management in your lab.

**NJIT Environmental Health and Safety (EHS)  
Department**

**Contact Us:**

**<https://www5.njit.edu/environmentalsafety/>**

**973-596-3059**

**[healthandsafety@njit.edu](mailto:healthandsafety@njit.edu)**

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