



New Jersey Institute
of Technology

New Jersey Institute of Technology (NJIT)

Guidelines for the Management of Regulated Chemical Waste

February, 2017
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 ($\text{pH} < 2$ or ≥ 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



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

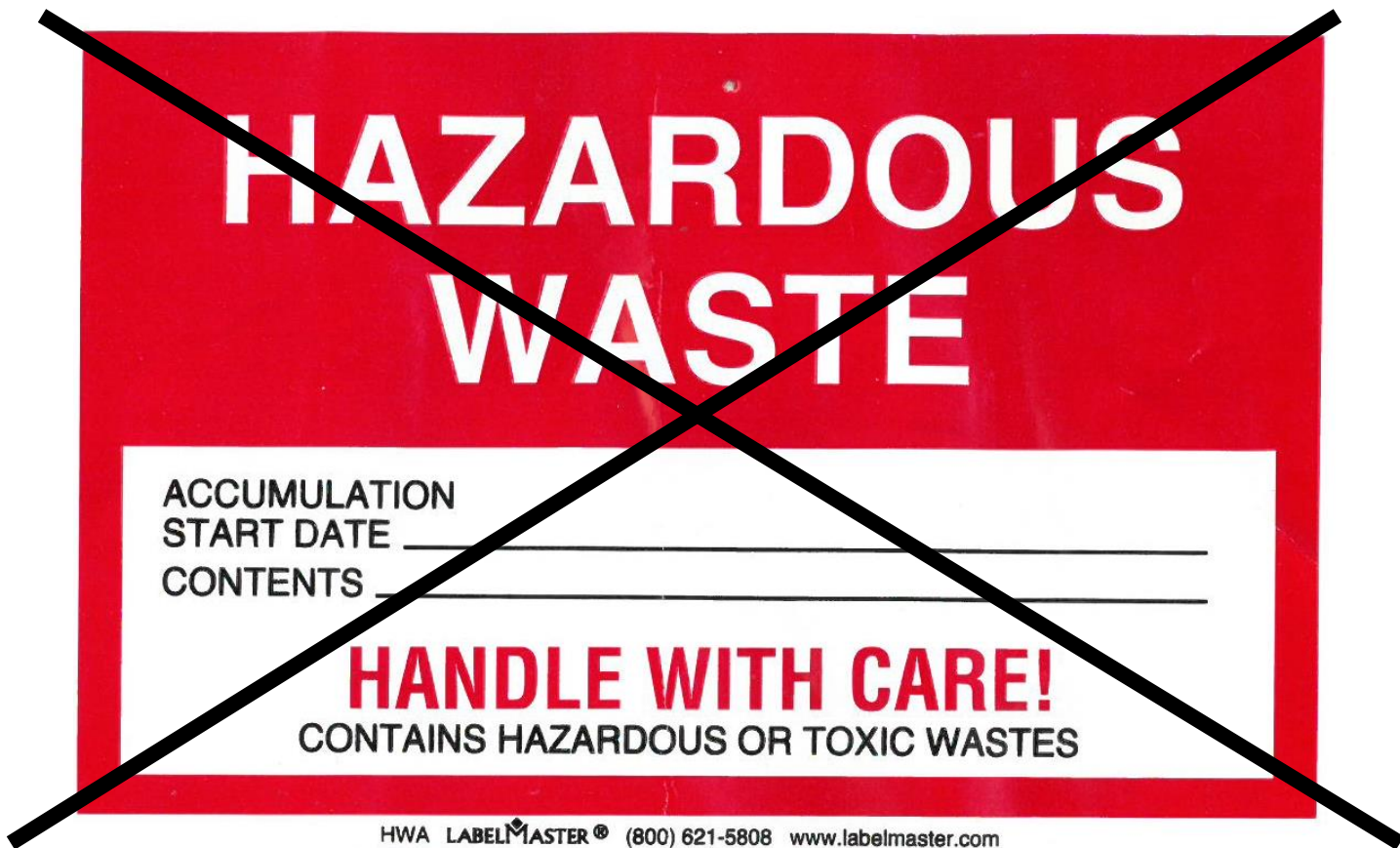
- Hazardous waste must be stored only in the laboratory's designated Satellite Accumulation Area (SAA)
- The waste labels are to be filled out completely – include Lab Contact Information
- Write the full name of all the chemical components and the approximate percentage of each substance. Total should 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 is the current NJIT Hazardous Waste label. Fill out chemical waste labels completely and accurately

List chemical components
of the waste and
percentages here

Check all that apply

Fill in lab contact
information

HAZARDOUS WASTE		
 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		
<input type="checkbox"/> Organic	<input type="checkbox"/> Liquid/Solid Mixture	<input type="checkbox"/> Oxidizer
<input type="checkbox"/> Inorganic	<input type="checkbox"/> Flammable	<input type="checkbox"/> Poison
<input type="checkbox"/> Solid	<input type="checkbox"/> Corrosive: [] Acid [] Base	<input type="checkbox"/> Carcinogen
<input type="checkbox"/> Liquid	<input type="checkbox"/> Reactive	<input type="checkbox"/> RCRA Metal
<input type="checkbox"/> Specific Storage Characteristics (e.g. air, water, shock reactive, etc.): _____		
Principal Investigator _____		Telephone # _____
Lab Manager _____		Email _____
Building _____		Room # _____

Chemical Waste Labeling

Recent changes to the RCRA statute will require NJIT to revise our Hazardous Waste label in the future.

When the recent changes to the RCRA statute become effective this spring, we will be required to identify the hazard type and associated waste code on the label. EHS will distribute the revised label at the appropriate time

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).

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



Waste Removal Request Form			
Principal Investigator:		Contact Information:	
Building:		Room:	

Type of Waste							
<input type="checkbox"/>	Chemical	<input type="checkbox"/>	Biological/Medical	<input type="checkbox"/>	Radiological	<input type="checkbox"/>	Acutely Hazardous ¹

#	Container Type:	Quantity/Size:	State of Contents:	Location of Waste:	Contents:	Hazard Type:
E X A M P L E	Steel Drum Plastic Pail Fiber Drum	2/ 30 gallon drum 1/ 5 gallon bucket 6/ 4 Liter Jug	Solid, Liquid	(Please be specific) By the door, Under the hood, etc.	(Please be specific) Methanol broken glass pharmaceutical waste	Flammable Corrosive Oxidizer, Toxic, Acid, Base, etc.
1						
2						
3						
4						

LABEL ALL WASTE CONTAINERS WITH CONTENTS BEFORE SUBMITTING THIS FORM
(Federal Law Prohibits the EHS Department from transporting waste containers that are not properly labeled – please label all waste)

Submit this form and any other questions to:

healthandsafety@njit.edu

Phone Number: (973) 596 3059

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



New Jersey Institute of Technology



Waste Container Request Form			
Principal Investigator:		Contact Information:	
Building:		Room:	

Type of Waste							
<input type="checkbox"/>	Chemical	<input type="checkbox"/>	Biological/Medical	<input type="checkbox"/>	Radiological	<input type="checkbox"/>	Acutely Hazardous ¹

Size and Type of Container	Quantity	Purpose and Category of Waste Container *please be specific*	State of Contents (Liquid / Solid)
Steel Closed Top		Solvents, pharma, non-hazardous liquids	
30 gallon drum			Liquids Only
Steel Open Top		Special request only	
30 gallon drum			Solids Only
Plastic Closed Top		Acids, bases, flammables, organics, inorganics	
30 gallon drum			Liquids Only
5 gallon pail			Liquids Only
Plastic Open Top		Special Request Only	
1 gallon pail			Solids Only
5 gallon pail			Solids/Liquids
15 gallon drum			Solids Only
30 gallon drum			Solids Only
Fiber Drum		Solid nonhazardous medical, contaminated PPE	
30 gallon drum			Solids Only
15 gallon drum			Solids Only
Biological Waste		Gloves, plastic tools, no sharps, bio-contaminated	
5 gallon pail with red bag			No Sharps
Medical box with red bag			
15 gallon fiber with red bag			No Sharps
30 gallon fiber with red bag			No Sharps
Sharps Containers		Sharps	Solids Only
Broken Glass		Contaminated and non-contaminated	
5 gallon pail			Solids Only
15 gallon drum			Solids Only

PLEASE NOTE: SEPARATE THE WASTE UNLESS THEY ARE SIMILAR

Ex: Do not store acids and flammables in the same container

Ex: All (empty) glass containers such as pipettes and bottles should go in the same container

Submit this form and all other questions to:

healthandsafety@njit.edu

Phone Number: (973) 596 3059

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

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

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