

The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The main title is centered in a large, bold, black sans-serif font.

SAFETY REMINDERS FOR THE ESPOSITO LAB

Prepared by Lucas Cohen

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Department of Chemical Engineering

Esposito Research Group

January 26, 2023

AGENDA

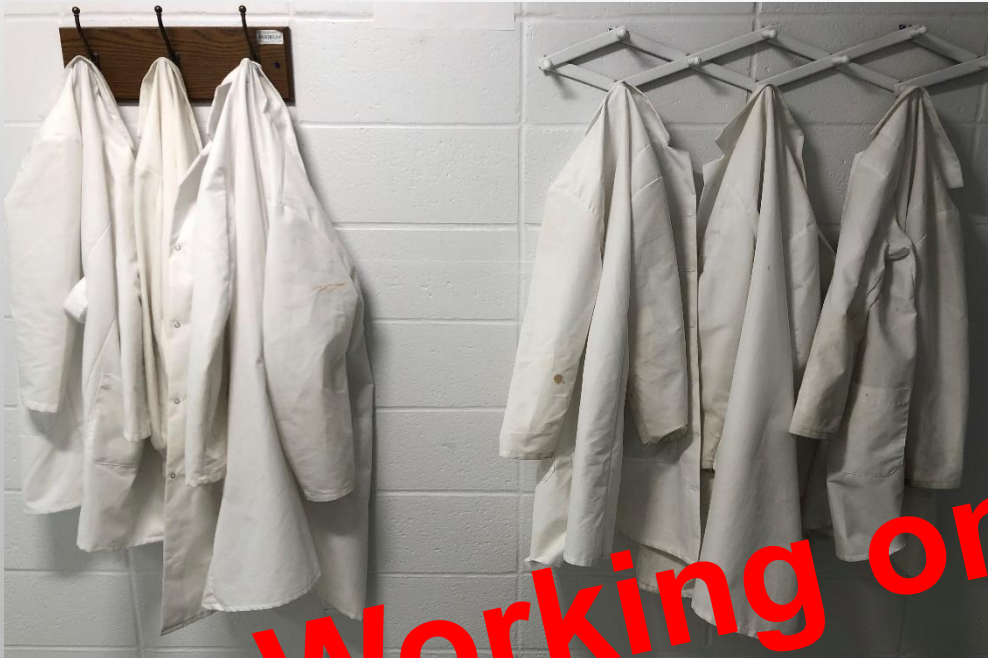
- GENERAL SAFETY OVERVIEW
- NEW SYSTEMS
- HAZARDOUS WASTE

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Safety Glasses – Required at all times
- Lab Coats – up to you
- Also available:
 - Face shield
 - Heavy duty gloves



Brand New!!!



Working on it....

TRANSPORTING CHEMICALS

Label **ALL** chemicals and containers in the laboratory with:

Chemical, Your Name, Date

Transport chemicals through the building:

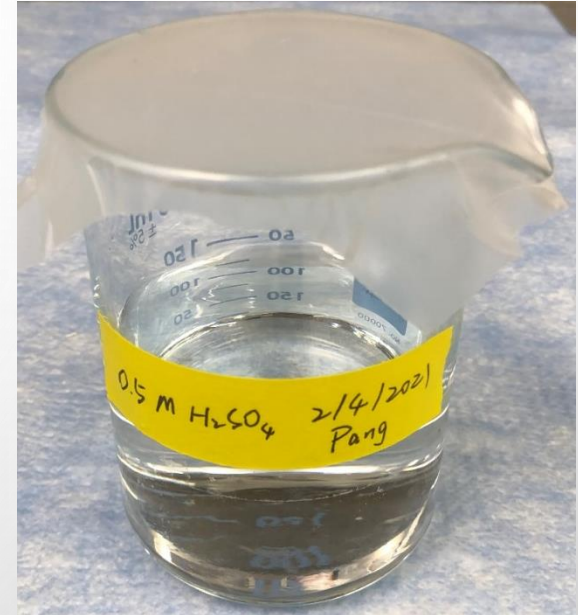
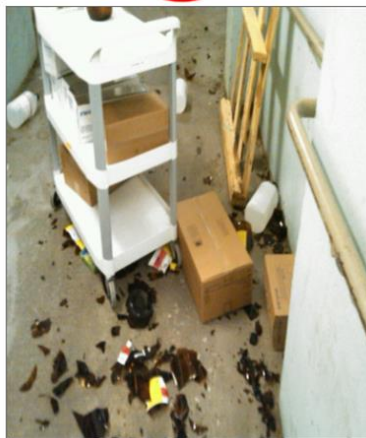
YES ✓



YES ✓



NO



STORING CHEMICALS

Store chemicals...

- On sturdy shelves or in cabinets
 - **Not on the lab bench or in the hood**
- In compatible secondary containers
- Segregated by compatibility
 - (see SDS if unsure)

Common Incompatibilities	
Flammables	Oxidizers
Acids	Bases
Organic Acids	Inorganic Acids
Water Reactives	Aqueous Solutions

COMPRESSED GASES

- Always secure cylinders to a stable mount
- Segregate incompatible gases by a minimum of 20 feet (like compressed O₂ tank and compressed flammable gas tank)
- Do not move tanks or exchange regulators without proper training


- **Close the tank after using it!**
 - **(but check to see if anyone is using it first)**
- **Double check it before you leave the laboratory!!**



CHEMICAL/HAZARDOUS WASTE

Full chemical names only

NO formulas or abbreviations

 **COLUMBIA UNIVERSITY**
ENVIRONMENTAL HEALTH & SAFETY

CHEMICAL / HAZARDOUS WASTE

Lab/ PI: Esposito ☎: _____
Building: E.T. Room #: 172

Chemical Name (No Formulas or Abbreviations)	Amount %
0.5 M sulfuric acid	

Check ALL hazards that apply if this is hazardous waste

Ignitable Toxic Corrosive Oxidizer Reactive

Check here **ONLY** if this chemical waste **DOES NOT** meet the EPA definition of hazardous waste (see guidance below) Non-Hazardous

Guidance for Making an Accurate Hazardous Waste Determination:
<https://research.columbia.edu/content/hazardous-waste-determination>

To Request Waste Pick Up: <https://research.columbia.edu/hazardous-materials-and-sustainability>

EH&S Use Only

Keep lid closed when not in use.
See reverse side for instructions.

Contact EH&S: Morningside/M'Ville/Nevis (212) 854- 8749 or CUIMC (212) 305-6780

CHEMICAL/HAZARDOUS WASTE

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Ignitable:

- Alcohols
- Acetone
- Hydrocarbons

Toxic

- Perchloric acid
- Formic acid
- Halogenated solvents
- Heavy metals

Corrosive

- Acids (pH < 2)
- Bases (pH < 10)

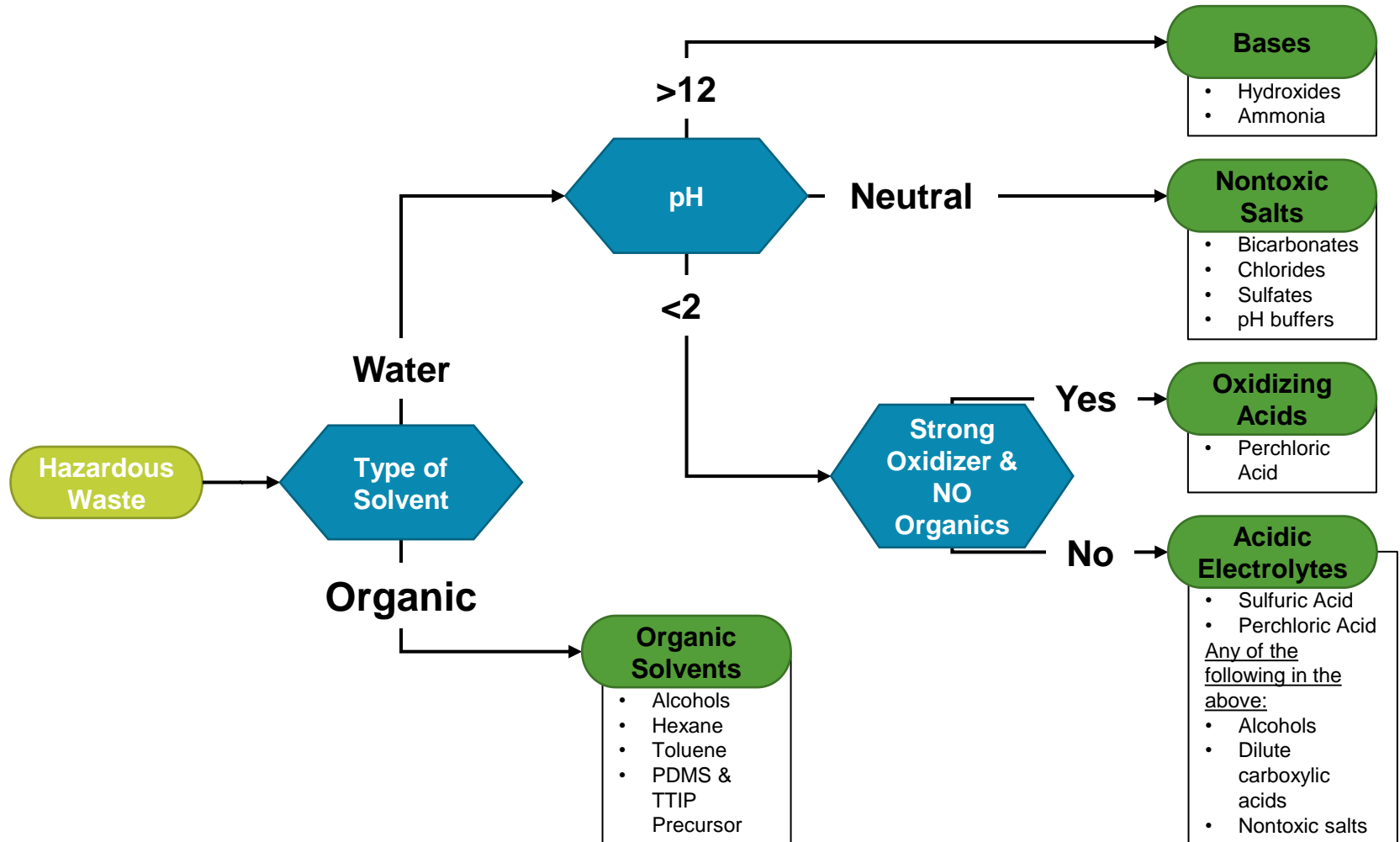
Oxidizer

- Nitrates, per-manganates
- Peroxides

Reactive

- Pyrophoric
- Explosive

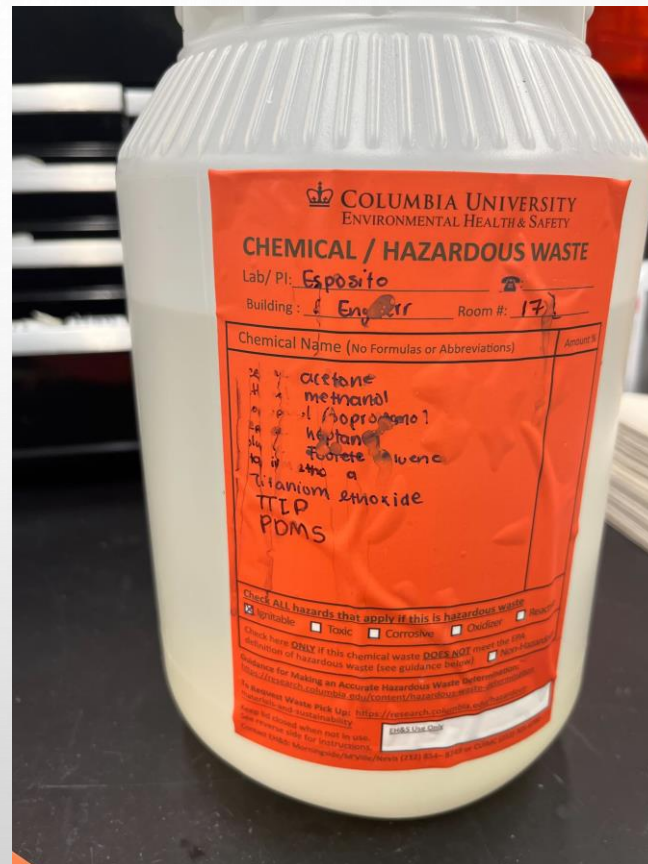
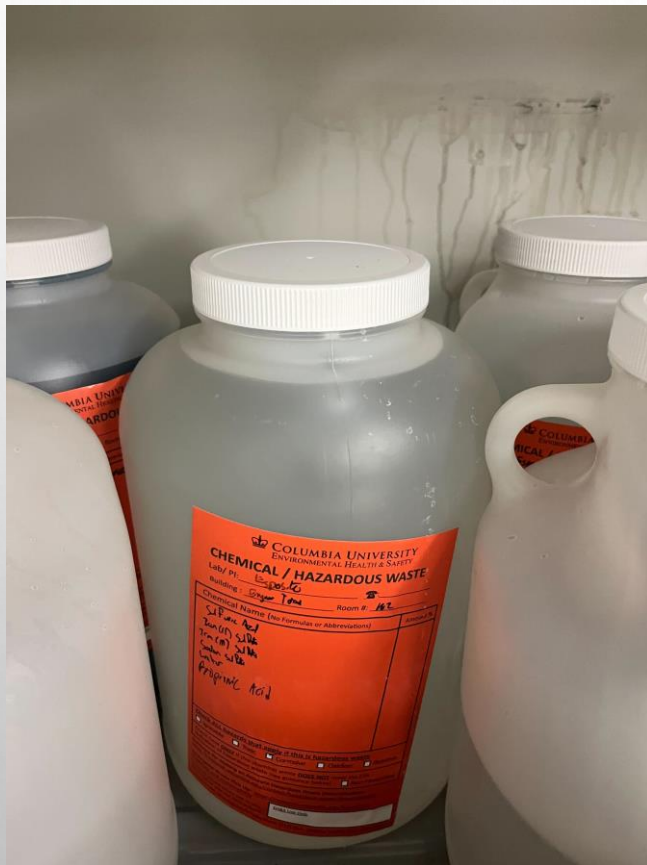
Hazardous Waste Flowchart



CHEMICAL/HAZARDOUS WASTE

Only fill waste containers to 2/3 max

Please use pencil on solvent waste containers



LAB RESPONSIBILITIES

Weekly Tasks:

- Put away dry glassware
- Go to stockroom
- Order supplies
- Check reference electrodes (biweekly)

Monthly Lab Cleaning:

- First Friday of every month (more or less)
- Next Lab Cleaning: 11/11 4PM

Any recommendations for new tasks or better ways to communicate/organize?

**ANY OTHER QUALITY OF
LIFE/SAFETY CHANGES YOU
WOULD MAKE TO THE LAB?**

BACKUP SLIDES

SAFETY DATA SHEETS (SDS)

Review SDS before beginning a new experiment or using a new chemical


METHANOL
ChemWatch Company
Chemwatch: 1230
Version No: 5.1.1.1
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 3
Issue Date: 01/01/2013
Print Date: 10/18/2014
Initial Date: Not Available
S.GHS.USA.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING


Product Identifier

Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS




	Min	Max
Flammability	3	3
Toxicity	3	3
Body Contact	3	3
Reactivity	1	1
Chronic	0	0

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme



GHS Classification Flammable Liquid Category 2, Acute Toxicity (Oral) Category 3, Acute Toxicity (Dusts and Mists) Category 3, Acute Toxicity (Inhalation) Category 2, STOT - SE Category 1

Label elements

GHS label elements   

1. Identification
2. **Hazard Identification**
3. Composition
4. **First Aid Measures**
5. Fire-fighting Measures
6. Accidental Release Measures
7. **Handling & Storage**
8. **Exposure Controls**
9. **Physical & Chemical Properties**
10. **Stability & Reactivity**
11. Toxicological Information
12. Ecological Information
13. Disposal Considerations
14. Transport Information
15. Regulatory Information
16. Other Information


CHEMICAL/HAZARDOUS WASTE

- Request Chemical/Hazardous Waste Pickup and Request New Waste Containers
 - https://cumc.columbia.edu/qualtrics.com/jfe/form/SV_6gqSpJrYyxX5lul
- Locations of waste containers
 - Acid waste: cabinet under the **east** fume hood
 - Base waste: cabinet under the **west** fume hood
 - Non-hazardous waste: cabinet under the west sink

CHEMICAL/HAZARDOUS WASTE

- Full chemical names only

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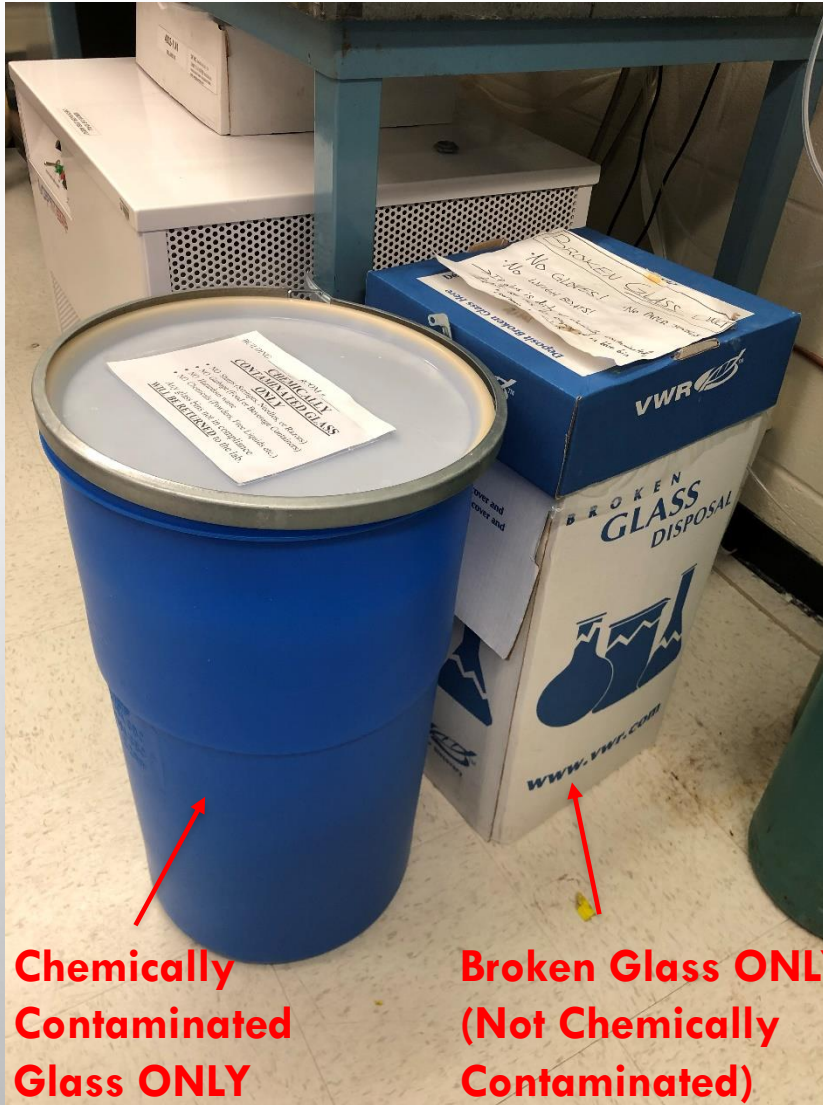
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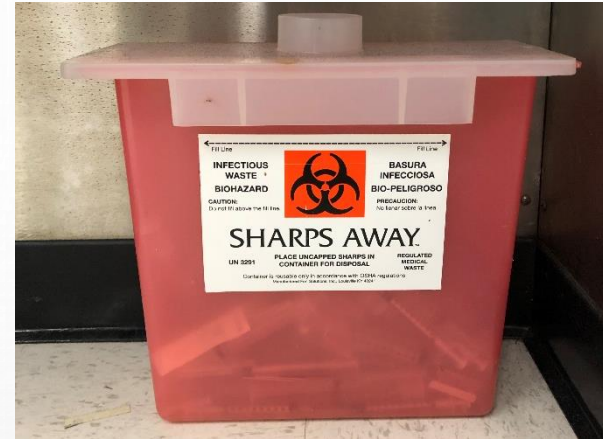
OTHER WASTE



**Chemically
Contaminated
Glass ONLY
EH&S**

**Broken Glass ONLY
(Not Chemically
Contaminated)
Facilities**

Sharps



Chemical Bottle Collector

