

# Hazardous Waste Standard Operating Procedures

**Containers:** The white 8 Liter reusable containers are acceptable storage containers. Container labels need to be checked before transferring to pickup area. Hazardous waste labels are available online at [www.ehs.uci.edu/programs/enviro](http://www.ehs.uci.edu/programs/enviro) . Double check labels to make sure that they are filled out correctly. Also check to make sure that the lids open easily and close firmly. Try to get ones that have the clear labels inserts, tape has a bad tendency to get rip/fall off easily.

**Labels:** Our labels need include the **start date**, the fact they are **flammable**, and contain less than **19 % water/Non-Flammables**. We have nominal labels already made for the peptide synthesizer and normal bench top use. Do **not** include other information such as corrosive/toxic/other unless they contains major amount of compounds that has contain those characteristics.

**Buffering:** Buffer all non-synthesizer containers with 10 g of sodium phosphate dibasic ( $\text{Na}_2\text{HPO}_4$ ) and 5 g of sodium phosphate monobasic ( $\text{NaH}_2\text{PO}_4$ ). Buffer synthesizer container with 10 g of sodium phosphate monobasic ( $\text{NaH}_2\text{PO}_4$ ) to counteract the pyridine (assumes that it is partially counteracted with 20 % HPLC eluate)

**Container Content:** Make sure the entire container contains less than or equal to 19 % non-flammable. Non-flammable solvents include water, DCM and other halogenated solvents.

**HPLC Eluate:** Analytical and preparatory HPLCs **needs** to be watched over carefully so it does not pile up. Usually transferring HPLC eluate **weekly** into the white containers so they contain about 15% HPLC eluate (assuming HPLC eluate has 65% water, this leaves 10% room for others to add water to the containers) This is about 1200 mL of HPLC eluate for the 8L containers.

**The peptide synthesizer:** Containers for the peptide synthesizer can contain 20% HPLC waste (~13% water) because additional water will not be added in and should contain 10 g of sodium phosphate monobasic ( $\text{NaH}_2\text{PO}_4$ ).

**Storage:** All hazardous waste need to be stored in appropriate containers with their lids on and inside a secondary overspill container. Full containers are stored in the yellow liquid storage cabinet. All waste must be transferred to EH&S within 6 months after being generated (not stored).

**Double Check Waste for Pickup:** **Double check** the labels. Containers are picked up from the downstairs solvent room. Place the containers in any available solvent cabinet. We only need to bring it down when our storage area is reasonable filled, usually around **10-12** full containers (~3 weeks at current usage). Please **inform** all hazardous waste members about moving waste to the pickup area. After you drop the containers off, **pickup an equal amount** of empty containers and place them in the waste cabinet. Please check the caps. Make sure the caps are tight or the containers will leak.

**Check pH:** The containers should be checked with pH paper before being handed off to the waste personal. Due to the amounts of pyridine and TFA used in the lab, the pH of our containers can vary. It needs to be within the range of 5-9 pH. Changes in the pH can cause fuming when the waste personal combine containers. Add addition sodium phosphate dibasic ( $\text{Na}_2\text{HPO}_4$ ) for acidic solution or sodium phosphate monobasic ( $\text{NaH}_2\text{PO}_4$ ) for basic solution to buffer the containers to 5-9 pH.

**Pickup:** Pickups are currently on Mondays mornings. Pickups need to be signed off. Please makes sure that at least one group member is available to sign off for waste pickup.

## Checklist

### When picking up the containers

- ☐ Container
  - ☐ The lid is not stuck
  - ☐ Lid firmly closes
  - ☐ Has a clear waste insert already attached (optional but makes life a lot better)
- ☐ Attach a new label
- ☐ Add 15% HPLC eluate (7% H<sub>2</sub>O) (don't let HPLC eluate pile up)
- ☐ Buffer the containers with 5g of Na<sub>2</sub>HPO<sub>4</sub>
- ☐ No old containers that are 6 months overdue

### Before drop off to waste personal

- ☐ Label:
  - ☐ Date containers was started
  - ☐ Contents
  - ☐ Lab
  - ☐ ≥ 19 % Non-Flammable solvents!
- ☐ Check pH if within 5-9
  - ☐ Adjust with Na<sub>2</sub>HPO<sub>4</sub> or NaH<sub>2</sub>PO<sub>4</sub> as needed
- ☐ Containers not overfilled
- ☐ Sign off on the waste

# Bench Top Waste Labels

Hazardous Waste			
University of California, Irvine (Irvine, CA 92697)			
PI/Supv.	Nowick	Ext.	2771
Date Waste First Generated (Transfer 6 Month):			
Chemical Name		Conc.	
Acetone		40	
EtOAc		25	
H2O		10	
Hexanes		10	
DCM		5	
DMF		5	
Methanol		5	
-----		-----	
Physical State: <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid			
Hazard Category			
<input checked="" type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Toxic <input type="checkbox"/> Air/Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Explosive			
Hazardous Waste			
University of California, Irvine (Irvine, CA 92697)			
PI/Supv.	Nowick	Ext.	2771
Date Waste First Generated (Transfer 6 Month):			
Chemical Name		Conc.	
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EtOAc		25	
H2O		10	
Hexanes		10	
DCM		5	
DMF		5	
Methanol		5	
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Physical State: <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid			
Hazard Category			
<input checked="" type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Toxic <input type="checkbox"/> Air/Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Explosive			
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Chemical Name		Conc.	
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DMF		5	
Methanol		5	
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Physical State: <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid			
Hazard Category			
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Hazard Category			
<input checked="" type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Toxic <input type="checkbox"/> Air/Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Explosive			

# Synthesizer Waste Labels

Hazardous Waste			
University of California, Irvine (Irvine, CA 92697)			
PI/Supv.	Nowick	Ext.	2771
Date Waste First Generated (Transfer 6 Month):			
Chemical Name		Conc.	
DMF		85	
H2O		15	
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-----		-----	
-----		-----	
-----		-----	
Physical State: <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid			
Hazard Category			
<input checked="" type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Toxic <input type="checkbox"/> Air/Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Explosive			

Hazardous Waste			
University of California, Irvine (Irvine, CA 92697)			
PI/Supv.	Nowick	Ext.	2771
Date Waste First Generated (Transfer 6 Month):			
Chemical Name		Conc.	
DMF		85	
H2O		15	
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-----		-----	
-----		-----	
-----		-----	
Physical State: <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid			
Hazard Category			
<input checked="" type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Toxic <input type="checkbox"/> Air/Water Reactive <input type="checkbox"/> Oxidizer <input type="checkbox"/> Explosive			

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DMF		85	
H2O		15	
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Physical State: <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid			
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