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. 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 (Na_2HPO_4) and 5 g of sodium phosphate monobasic (NaH_2PO_4). Buffer synthesizer container with 10 g of sodium phosphate monobasic (NaH_2PO_4) to counteract the pyridine (assumes that it is partially counteracted with 20 % HPLC eluate)

Container Content: Make sure the entire container contains <u>less</u> 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 ($^{\sim}13\%$ water) because additional water will not be added in and should contain 10 g of sodium phosphate monobasic (NaH₂PO₄).

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 (Na_2HPO_4) for acidic solution or sodium phosphate monobasic (NaH_2PO_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% H₂O) (don't let HPLC eluate pile up) Buffer the containers with 5g of Na₂HPO₄ No old containers that are 6 months overdue

Before drop off to waste personal

Containers not overfilledSign off on the waste

Label:			
0	Date containers was started		
0	Contents		
0	Lab		
0	≥ 19 % Non-Flammable sovents!		
Check pH if within 5-9			
0	Adjust with Na ₂ HPO ₄ or NaH ₂ PO ₄ as needed		

Hazardous Waste	Hazardous Waste				
University of California, Irvine (Irvine, Ca	A 92697)	Universi	ity of California,	, Irvine (Irvine, C	A 92697)
PI/Supv. Nowick Ext.	2771	PI/Supv.	Nowick	Ext.	2771
Date Waste First Generated (Transfer 6 Month):		Date Waste F	irst Generated (T	Transfer 6 Month)):
Chemical Name	Conc.		Chemical Nam	ne	Conc.
Acetone	40	Acetone			40
EtOAc	25	EtOAc			25
H20	10	H20			10
Hexanes	10	Hexanes			10
DCM	5	DCM			5
DMF	5	DMF			15
Methanol	5	Methanol			15
]				
]				
Physical State: Gas Liquid	Solid	Physical State	e: 🔲 Gas	🔽 Liquid	Solid
Hazard Category			Hazard	l Category	
Flammable Corrosive To	oxic	▼ Flammak	ole 🔲 Co	orrosive T	oxic
Air/Water Reactive Oxidizer	plosive	Air/Wate	er Reactive 🔲 Ox	xidizer	xplosive
Hazardous Waste			Hazardo	ous Waste	
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H20	10	H20			110
Hexanes	10	Hexanes			110
DCM	5	DCM			15
DMF	5	DMF			т ₅
Methanol	5	Methanol			+ <u>5</u>
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Physical State: Gas Viquid	Solid	Physical State	e: Gas	Liquid	Solid
Hazard Category		1 Hysreal State	-	l Category	J00u
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EtOAc		H20			10
H20	10				
Hexanes	10	Hexanes			→ ¹⁰ – – –
DCM	5	DCM			15
DMF	5	DMF			15
Methanol	5	<u>Methanol</u>			15
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Physical State: Gas V Liquid	Solid	Physical State		Liquid	Solid
Hazard Category ✓ Flammable Corrosive To	Flammer I		Category	avia	
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Date Waste First Generated (Transfer 6 Month):		Date Waste Fi	rst Generated (Tr	ransfer 6 Mon	nth):
Chemical Name	Conc.		Chemical Name		Conc.
DMF 85		DMF			85
H2O 15		H2O			15
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Physical State: Gas Liquid	Solid	Physical State	Gas	✓ Liqu	uid Solid
Hazard Category		1 Hydrear diale		Category	
Flammable Corrosive Toxic		▼ Flammab		rosive \(\Gamma\)	Toxic
Air/Water Reactive Oxidizer Explos	ive			dizer	Explosive
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PI/Supv. Nowick Ext. 27	71	PI/Supv.	Nowick	Ext.	2771
Date Waste First Generated (Transfer 6 Month):		Date Waste Fi	rst Generated (Tr	ransfer 6 Mon	nth):
Chemical Name	Conc.		Chemical Name	2	Conc.
DMF 85		DMF			185
H2O 15		H2O			15
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Physical State: Gas Liquid	Solid	Physical State	: Gas	🔽 Liqu	uid Solid
Hazard Category				Category	
▼ Flammable		▼ Flammab		rosive	Toxic
Air/Water Reactive Oxidizer Explos	sive			dizer	Explosive
Hazardous Waste			Hazanda	us Waste	
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PI/Supv. Nowick Ext. 27	71	PI/Supv.	Nowick	Ext.	2771
Date Waste First Generated (Transfer 6 Month):		Date Waste Fi	rst Generated (Tr		
Chemical Name	Conc.		Chemical Name	2	Conc.
DMF 85		DMF			_ 185
H2O		H2O			_ 15
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Physical State: Gas Viquid	Solid	Physical State	: Gas	✓ Liqu	uid Solid
Hazard Category			Hazard	Category	
Flammable Corrosive Toxic		▼ Flammab		rosive [Toxic
Air/Water Reactive Oxidizer Explos	sive			dizer	Explosive