

Lab Safety Seminar

### <u>Alphabet Soup</u> EH&S, IIPP, EAP, SOP, CHP, LSP, PI, LHAT, PPE, SDS, CIS, CUPA, BUA, RUA, JSA (JHA)

**Department of Food Science and Technology** 

**University of California, Davis** 







### General Laboratory Safety "Don'ts"



- *Don't* eat, drink, chew gum or apply cosmetics where chemicals or biological hazards are used
- *Don't* store food in refrigerators or cold rooms with chemicals or other hazardous materials
- *Don't* leave equipment or reactions to run unattended
- Don't work alone in the lab after normal working hours without supervisor's approval





### Don't leave a mess







### Safety Seminar Topics

Injury and Illness Prevention Plan (IIPP) Department

- Chemical Hygiene Plan (CHP) UC Davis Laboratory Safety Manual
  - Lab Hazard Analysis (LHAT), Standard Operating Procedures (SOP) PI
- Training
  - Online UC Safety Training (UC Fundamentals of Laboratory Safety) UCOP
  - Site Specific Training Checklist (Site-Specific Safety Orientation & Training for New Laboratory Personnel) **PI** (Principle investigator)
- Chemical Inventory System (Chemicals) PI
- Safety Data Sheet (SDS) Global Harmonized System (GHS)
- Personal Protection Equipment (PPE) PI
- Emergency Action Plan (EAP) Department
- Hazardous Materials Handling and Disposal: Lab Standard or Hazard Communication (HazCom) PI with EH&S

Safety Services Resources - http://safetyservices.ucdavis.edu/



### Injury and Illness Prevention Plan (IIPP)

- Management commitment/assignment of responsibilities
- Safety communications system with employees
- System for assuring employee compliance with safe work practices
- Scheduled inspections/evaluation system
- Procedures for correcting unsafe/unhealthy conditions
- Safety and health training and instruction
- Recordkeeping and documentation
- Accident Investigation



# **ELEMENTS OF THE IIPP**





# **Campus Chemical Hygiene Plan**







# Chemical Hygiene Plan (CHP)

- Establishes a formal written program for managing the risks posed by health and safety hazards associated with the use of hazardous chemicals in laboratories
- Describes the proper use, handling, storage and disposal practices and procedures to be followed
- Applies to employees who use chemicals in teaching and research laboratories at the UC Davis Campus
- Employer: Shall provide a workplace free from recognized hazards that may cause death or serious injury
- Employee: Shall comply with occupational safety and health standards, rules, regulations, and orders.





# Chemical Hygiene Plan (CHP)

- Rights and Responsibilities (UC Office of the President and Board of Regents)
  - Campus Administration Policies and Procedures (Chancellor, Provost and Deans Offices)
  - Policy Specifics (Chemical and Laboratory Safety Committee)
  - PI Support and Enforcement (Department Chair)
  - Site Specific Rules, Training, and Laboratory Safety Procedures (PI)
  - Training, Standard Operating Procedures, Safety Data Sheets, Personal Protective Equipment (Personnel)
  - Information, Training Tools, Support, Inspections (EH&S)
  - Laboratory Safety Manual http://safetyservices.ucdavis.edu/article/laboratory-safety-manual



# Online Tools ehs.ucop.edu/



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Welcome to RSS Platform

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### Hazard Assessment (LHAT)

arı My Workspace	mc
ass Certified [ Aug 23, 2021 - Aug 23, 2022 ]	
Continue	
This assessment evaluates the activities in a lab or research environment to identify potential hazards. These activities can pose chemical, physical, biological, radiological, laser and non-ionizing radiation hazards.	ACKNOWLEDGE
Group: Harris Lab	
Rooms: Robert Mondavi Institute for Wine & Food Science - Building B (South) - 3221, 3221A	LHA Setup
Principal Investigator, Supervisor or other Responsible Person Details:	
Name: Linda Harris	Roster
Email: ljharris@ucdavis.edu	
Phone: +1 530 754 9485	Locations
Document Name	
Harris Lab Assessment	Chemical Hazards
	Physical Hazards
	Biological Hazards
U	CDAVIS cience & echnology



# Laboratory Safety Training Check List

- □ Take the online UC Laboratory Safety Fundamentals
- □ Complete site specific training, sign and date
- Complete any additional training assigned by your supervisor (Training Matrix)
- □ Review LHAT and view PPE video
- □ Obtain Personal Protective Equipment (PPE) as determined by the LHAT
- Receive training on conducting "Standard Operating Procedure" lab functions or "Prior Approval" procedures (specific reactions & equipment)
- Read and understand the IIPP, Emergency Action Plan (EAP) and Chemical Hygiene Plan (CHP)



#### UC Laboratory Safety Fundamentals

UC Laboratory Safety Fundamentals This on-line course must be successfully completed by all existing laboratory personnel before any new worker is granted unescorted access to the laboratory

Introduction to laboratory safety fundamentals, chemical safety, and general safety. This course covers relevant campus Laboratory Safety Manual(s) and rights/responsibilities according to applicable regulations



#### Site-Specific Safety Orientation & Training for New Laboratory Personnel Revised - 10/2013

Prior to completing this site safety orientation and training, all laboratory personnel must have successfully completed the <u>UC Laboratory Safety Fundamentals</u> course. Completion of this training is required prior to personnel being granted unescorted access to the laboratory. This serves to satisfy components of the <u>University of California Policy - Laboratory Safety Training</u> and UC Davis policy <u>PPM290-56</u>.

١I		confirm receipt of training on the listed topics on
	(print name, trainee)	
I	<b></b> from	All of my questions regarding
	(date)	(print name, trainer)

this material have been answered. Topics have been initialed, or marked with an "X" where not applicable.

(signature, trainee)

Biological Safety Cabinet(s):

(signature, trainer)

Demonstration of proper use, instruction on adjustable

controls and training requirements.

Initial	Торіс	Action					
	EMER	GENCY PROCEDURES					
	Fire Alarm Pull Station:	Show location(s) and proper activation.					
	Eye Wash / Safety Showers:	Show location(s) and proper operation.					
	Chemical Spill Procedure	Show location of spill kit(s), SafetyNets $\frac{#13}{2}$ and $\frac{#127}{2}$ (if applicable), and describe procedures.					
	First Aid Kits:	Location(s) and description of contents. Location(s), detail dialing instructions, '911' dialing instructions, bomb threat card.					
	Phone:						
	Emergency Response Guide:	Location(s) of flipchart guide, discuss scenario actions					
	Emergency Action Plan:	Review Emergency Action Plan. Demonstrate both paths to Emergency Assembly Area. Review evacuation procedures for disabled employees if applicable.					
	Warn Me:	Enroll in UC Davis <u>Warn Me</u> emergency alert system, recommend registering cellular phone number.					
	ENG	INEERING CONTROLS					
	Chemical Fume Hood(s):	Demonstration of proper use, instruction on adjustable controls, flow sensor function, and training requirements.					

# Site Specific Training





#### Safety Training Matrix for Laboratory Personnel

**Complete this Medical or Training Requirement** 

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#### WHAT:

This document outlines the minimum medical & training requirements for personnel working in a research setting at UC Davis. Answer the questions below to determine which requirements apply to you. If you answer "Yes", the corresponding requirements apply. It is recommended that you complete the requirements in the numeric order listed below. Note, this matrix does not include site-specific training or research-specific training that must be completed.

#### WHO:

Principal Investigators (PI), lab supervisors, research personnel, volunteers, graduate & undergraduate students in research laboratories as well as general staff working in laboratories and animal housing facilities.

Arev	ou a UC Davis faculty, staff, or student who	1.0	2. 0	3. L	4. P	5. E	6. U	7. H	8. H	9. H	10. F	11. S	12. R	13. Li	14. A	15. N	10
2	will use chemicals or work in a wet lab?	X															Γ
orato	will have access to controlled substances?	х	X														
4 ~	will use/wear PPE?	Х		Х													
	will use/wear specialty PPE?	Х			Х												
afety	will need respiratory protection?	*				Х											Γ
rial S	will use shop equipment?	*					Х										
Idust	will encounter noise in workplace?	*						Х									
-	will work with hazardous materials in an industrial setting?	*							Х								
= Å	will be working outdoors?									х							
<b>Safi</b>	will be conducting field research?										X						Γ
E	will work with any material that falls under Cal OSHA Bloodborne Pathogen Standard?	Х										Х					
safel	will work with recombinant DNA	Х										Х					Γ
Bi	will work with materials that are infectious or contain infectious agents (to plants, animals, or humans)?	Х										Х					
=	will handle radioactive materials?	X											Х				
diatio	will work with lasers?	*												X			
a s	will work with x-ray producing equipment?	*													X		
2:	will handle animal carcasses, animal tissue or will have access to vivarium?	X														X	Γ

# Training Matrix





## LMS Safety Training Classes and EH&S Safety Nets

- Research and Laboratory Safety
- General and Equipment Safety
- Ergonomics
- Biological Safety BUA
- Animal Care





### Laboratory Chemical Use Check List

- □ Check lab chemical inventory before ordering a chemical
- Add each new chemicals to chemical inventory with barcode tag (ChemTag)
- □ Read Safety Data Sheet (SDS)
- Add to the Standard Operating Procedure (SOP) or create a new SOP if required
- □ Use proper personal protection (long pants, sleeved shirt, closedtoe shoes, eye protection, lab coat, proper gloves, etc.)
- \*Dispose of chemical waste in properly labeled and dated container
  \*WASTe online system, SafetyNet 8



### Chemical Inventory System (Chemicals)

Inventory -	Keyword Substructure	
	Search by cas #, name, formula, GHS or container barcode	
	Location	▼ Tags ▼
0f	<b>Camphene</b> CAS: 79-92-5 Physical State: solid GHS: H228 , H313 , H319 , H400 , H410 Containers: 1	
	<b>2-Methoxy-4-vinylphenol</b> CAS: 7786-61-0 Physical State: liquid GHS: H315 , H319 , H335 Containers: 1	$\diamondsuit$
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Ammonium phosphate monobasic CAS: 7722-76-1 Physical State: solid GHS: H315 , H319 , H335 Containers: 1	$\bigstar$
	TWEEN 20 CAS: 9005-64-5 Physical State: liquid (viscous liquid) GHS: H316 Containers: 1	
	2-Nonanone	UCDAVIS cience & echnology



- Identity of the chemical
- Hazardous nature of chemical
- Physical characteristic (e.g., boiling point)
- Fire and explosion information
- Reactivity data
- Health hazard data (e.g., health effects, symptoms)
- Personal protective equipment needed
- How to handle leaks, spills and disposal
- Special precautions



#### SAFETY DATA SHEET

Version 4.14 Revision Date 02/15/2017 Print Date 08/08/2019



Acute toxicity, Oral (Category 2), H300 Germ cell mutagenicity (Category 2), H341 Reproductive toxicity (Category 1B), H360 Acute aquatic toxicity (Category 2), H401 Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

Danger

#### 2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word

Hazard statement(s)	
H300	Fatal if swallowed.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.
H411	Toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P264	Wash skin thoroughly after handling.

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#### SDS Information

#### **The Globally Harmonized System of Classification and Labeling of Chemicals** (GHS)

- Signal word either **DANGER** or **WARNING**
- Precautionary statement indicating product handling to minimize risks to the user
- H200 Physical Hazard
- H300 Health Hazard
- H400 Environmental Hazard
- The lower the number within the category the higher the hazard i.e. H300 is more hazardous than H304



# Hazard Symbols







### Hazardous Material Control Systems

- Chemical Fume Hoods
- Glove Boxes
- Flammable Liquid Storage Cabinets
- Biological Safety Cabinets
- Chemical Spill Clean-up Kit
- Other Engineering Controls



#### **Standard Operating Procedures**

•Document the laboratory-specific procedures for the safe handling, storage and disposal of hazardous chemicals

 PIs and laboratory supervisors are responsible for establishing SOPs relevant to health and safety for laboratory activities involving hazardous chemicals under their direction

•Cal/OSHA requires standard operating procedures (SOPs) be established for work with hazardous chemicals

 Stated in the <u>8 CCR § 5191</u> (Occupational Exposure to Hazardous Chemicals in Laboratories, "Laboratory Standard") under the provisions of the Chemical Hygiene Plan

# Elements of an SOP

- Establish a designated work and storage area
- Determine engineering controls, i.e. fume hood
- Determine proper personal protective equipment
- Establish procedures for waste removal
- Set up decontamination procedures



# Hazard Class SOP

- Acutely Toxic Chemicals
- Carcinogens
- Corrosives
- Cryogens
- Flammable Solids and Liquids
- Reproductive Toxins
- Pyrophorics
- Working Alone
- Water reactives
- Potentially Explosive Compounds

Templates available on Safety Services website UCDAVIS



# **Personal Safety**





# NO PANTS, NO SHOES NO SCIENCE



FOR MORE INFORMATION CONTACT ENVIRONMENTAL HEALTH AND SAFETY AT (806) 742-3876 www.ehs.ttu.edu | www.safety.ttu.edu







### Personal Protective Equipment (PPE)

- Eye Protection
  - Safety Glasses, Safety Goggles, Face Shields
- Gloves
  - Nitrile, Chemical-handling, High-temp.
    Lo-temp.
- Other Protective Clothing
  - Lab Coats, Aprons, etc.
- Respiratory Protection
  - Dust and Mist Respirators
- Other
  - -e.g., Hearing Protection











#### **PPE Etiquette**

- Do not wear soiled or contaminated lab coats in shared spaces
  - Wear clean lab coats for use in autoclave rooms
- Transport items in clean secondary containers and do not use gloves in hallways.
  - If transporting large amounts of liquids (1 L or more) use a clean cart to transport items (still must be stored in clean secondary containers)
- If working in another lab, have another lab coat in that lab OR bring a clean lab coat with you
- Remove gloves before putting on or taking off lab coat.
- Change gloves immediately if any chemical or biohazard is spilled on them
  - Gloves have breakthrough time for certain chemicals and can have small holes unseen to the naked eye (1-5 out of 80 gloves can have "allowable" defects).
- Do not touch face, phones or any exposed body part or personal items with gloves
- Wash hands after removing lab coat



#### Glove selection and breakthrough times

	Natural rubber	Neoprene	Butyl	PVC	Nitrile	Viton
Chemical						
Acetic acid	2	3	4	2	1	4
Formic acid	2	3	4	3	2	2
Hydrofluoric acid (up to 70%)	2	2	3	1	1	?
Nitric acid 70+%	?	1	2	?	1	4
Sulfuric acid 70+%	1	2	4	2	1	2
Benzene	1	1	1	1	1	3
Toluene	1	1	1	1	1	4
Xylene	1	1	1	1	1	4

Selection Key:

- 4 Excellent, breakthrough times generally greater than 8 hours.
- 3 Good, breakthrough times generally greater than 4 hours.
- 2 Fair, breakthrough times generally greater than 1 hour.
- 1 Not Recommended, breakthrough times generally less than 1 hour.
- ? Not Tested or Information unknown. Use known tested glove type.





### **Emergency Action Plan (EAP)**

The program must be in writing and include the following elements:

- Emergency escape procedures and emergency escape route assignments
- Procedures to account for all employees after an emergency evacuation
- The preferred means of reporting fires and other emergencies
- Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan
- A system to notify employees of an emergency
- Procedures for employees who remain to complete critical operations before they evacuate
- Rescue and medical duties for those employees who are to perform them
- Training for all employees on the EAP
- The written plan must be kept in the workplace and made available for employee review





#### Emergency Action Plan Know the locations of:

- All exits for your workplace and the building
- Alarm pull boxes and fire extinguishers
- Nearest phone
- Safety showers and eyewashes
- First-aid kits
- Chemical spill kits

If you will need assistance during evacuation, please contact me in advance!



#### **Evacuation Plan - RMI South - 2nd Floor**







### Procedures in Case of Fire

- If fire is small you may attempt to neutralize the threat without endangering yourself
- If you are unsure Leave the area, being sure others are out
- CLOSE THE DOOR!
- ACTIVATE THE NEAREST BUILDING FIRE ALARM
  - Once manual pull alarm is activated, alarm will emit audible and visual (strobing lights) signals to warn occupants of evacuation
- DIAL 911 (or 530-752-1230)
- STAY AWAY FROM AREA AND CLOSE ALL DOORS!
  - Doors in RMI complex are fire rated and will help prevent the spread of fire to surrounding areas
- Go to agreed meeting place
- Stand by to advise the emergency personnel when they arrive











# Fire extinguishers: Types and how to use

- 5 types
  - Class A: ordinary combustibles wood, paper, trash etc
  - Class B: flammable/combustible liquids
  - Class C: Electrical fires
  - Class D: special metals
  - Class K: Kitchen fires (oil, grease, etc.)
- All buildings in RMI equipped with combo extinguishers (A+B+C)
- Emit a powder that suffocates the fire
- Need to be checked monthly





### How to check fire extinguishers

- Need to be checked monthly
- Make sure needle is within the green range
  - Look at the needle as if you were looking at a meniscus of a liquid
- Put date and initials of person checking on the tag
- If there are issues, contact fireprevention@ucdavis.edu



### How to use a fire extinguisher

#### PASS

- P: pull the pin (note take care not to squeeze handle)
- A: aim at the base of the fire and stand back 5-6 ft
- S: squeeze the handle and move carefully closer as powder is being discharged
- S: sweep back and forth to cover the range of the fire
- This should only be done when fire is at the beginning stage. If flames are large, evacuate. 911 should already have been alerted
- Fire extinguisher will only last 20-30 seconds



Fire Extinguisher Training Video-OSHA





### Procedures in Case of Earthquake

- Get under a desk, table, archway, etc. during the shaking
- Leave the building after the shaking is over
- If outside during shaking, stay clear of buildings, trees, etc.
- DIAL 911 (or 530-752-1230) to report any fires, ruptured pipes or downed electric lines
- Assist injured persons in securing medical attention
- Go to agreed meeting place
- Stand by to advise emergency personnel when they arrive



### Active Shooter

- Immediate actions
  - Run
  - Hide
  - Fight
- Seek Help
  - Call 911 and provide as much information as possible:
    - Location, what is happening, description of suspect, your name and number
- Silence your phone:
  - If you cannot speak, turn the sound off with line open so police can hear what is going on
- <u>https://safetyservices.ucdavis.edu/units/emergency-preparedness/procedures/active-shooter</u>
- LMS: <u>Shots Fired</u>



### **Campus Safety Tips**

#### Safety tips from UCD Police Department:

- Always be alert to your surroundings. This includes persons and vehicles.
- Report suspicious activity to UC Davis Police at (530) 754-2677.
- Do not allow strangers to enter behind you at secured facilities, residences halls and do not lend your entry keys.
- Report criminal activity (such as break-in, intruder, robbery, assault) immediately to 9-1 1
- Always lock your doors. Secure your property by locking doors to offices, laboratories, and buildings.
- At campus office facilities, report malfunctioning or broken doors and windows to Facilities call (530) 752-1655

#### **Department Safety Tips:**

- Do not leave personal items or items of value in your vehicles and always lock your vehicle,
- Set up a communication system with other co-workers. If working late or alone, this can be used to alert of your safe arrival and departure from the building and in case of emergencies.
- Make sure all entry doors are closed and not propped open to prevent building breakins and theft.
- Report any building malfunctions to <u>bftvfacilities@ucdavis.edu</u>

#### Campus Resources for Personal or Property Safety

#### UC Davis Campus Emergency Line: (530) 752-1230

- For Police, Fire, or Medical emergencies
- If on a **cell phone** on campus, use this number, for landline, dial **911**

#### UC Davis Police Department 24 hour Non-Emergency: (530) 752-1727

- Can be contacted to report suspicious behavior or for non-emergency situations
- Can be contacted if you are on Campus and feel unsafe

#### Safe Rides/UCD Police Department: (530) 754-2677

- https://police.ucdavis.edu/safe-rides
- Hours of Operation:
  - 7 days a week, 5:00 p.m. to 10:00 p.m., on-campus to another on-campus location
  - 7 Days a week 10:00 p.m. to 6:00 a.m., on-campus location pick-up to any location in the city of Davis
  - VIP wheelchair transportation
    - 24/7 on campus to another on campus location
    - 7 Days a week, 10:00 p.m. to 6:00 a.m., on-campus location pick-up to any location in the city of Davis

### **Emergency notification**

#### **Campus emergency notification**



#### **UCD WarnMe alerts**

#### **Everbridge- personal safety mobile app**





#### TransLoc App

Requesting a SafeRide just got even easier! We've officially launched a **new app** called TransLoc!

# Contributors to accidents

• Rushing, Frustration, Fatigue, Complacency

#### Leads to Errors:

- Eyes not on task
- Mind not on task
- Line-of-fire
- Balance/Traction/Grip









### Procedures in Case of Chemical Spill

- 1 pint or more or when in doubt, call UC Davis Fire Department (911)
- Evacuate the room, close the door, and wait for emergency personnel
- Flammable? Turn off all ignition sources before securing the room
- In case of chemical contact with skin or eyes, flood the affected area immediately with water; Seek medical assistance
- All contaminated clothing must be removed immediately
- Small spills (1 pint or less) may be cleaned up by laboratory personnel with a spill kit
  - Acids and bases should be absorbed can be neutralized
  - Flammable liquids may be absorbed
  - DO NOT attempt to blot cryogenic liquid spills with unprotected hands, allow the liquid to evaporate
  - Solid spills are not usually emergencies. If the material spilled is toxic, use dampened cloths or paper towels to transfer it to plastic bags and disposed of as hazardous waste.

UCDA

- Report spills to EH&S (530) 752-1493



# Safety Shower and Eyewash Procedure

- If someone is contaminated with hazardous chemical
- Remove contaminated clothing if possible
- Rinse in emergency shower 15 minutes
- If eyes are involved, rinse eyes in the eye wash for 15 minutes holding eye(s) open
- Call 911 or (530)752-1230 or go to the hospital emergency room





# Spill Kit

**Guidelines for Chemical Spill Control SafetyNet #13:General Steps To Follow** 



# Steps for Clean Up









# Hands-on spill training

- Hoping to be offered at least once Fall and Spring Quarter
- Open to all interested who are working in labs

#### Spill materials had different effectiveness



Amphomag generated lots of dust and left residue



Green spill pillow essentially ineffective



Vermiculite very effective and easy to clean



Spill pads were extremely effective and easiest to use



Spill Magic<sup>™</sup> also effective and easy to clean



Biohazard spill was great practice for those handling BSL-2



# Reporting a "Near Miss"



WWW. PHDCOMICS. COM



### Report a "Near Miss" to Safety Services

#### • Report an Incident or Concern

- All faculty members, staff, students and visitors at UC Davis can participate in making the campus a safe place to work, study, and live by identifying health and/or safety hazards or unsafe conditions by informing those responsible for the problem area.
- Employees are advised that use of this form or other reports of unsafe conditions or practices are protected by law. It would be illegal for the employer to take any action against an employee in reprisal for exercising rights to participate in communications involving safety.





### **Definition of Hazardous Waste**

- Toxic
  - Any substance which may be harmful to the environment or hazardous to your health if inhaled, ingested or absorbed through the skin.
  - Includes acute toxins, carcinogens, other chronic toxins with bioaccumulative properties or persistence in environment
- Reactive
  - Substances that can produce toxic gases, are explosive, react violently with water, or contain cyanide or sulfide
  - Includes explosives, oxidizers, reducers, water sensitive, acid sensitive, air sensitive and unstable chemicals
- Flammable
  - Flash point < 140  $^{\circ}$  F (60  $^{\circ}$  C)
  - Capable of causing fire through friction, moisture or reactivity
  - Includes oxidizers and flammable compressed gases
- Corrosive
  - − pH ≤ 2 or pH ≥ 12.5
  - Corrosive to tissue or metals





# Guidelines for Disposal of Chemical Waste

- SafetyNet #: 8
- WASTe program required
  - All hazardous material and hazardous chemical waste must be picked up by Environmental Health and Safety (EH&S) or an EH&S-approved contractor.
- Drain Disposal
  - Drain disposal of non-hazardous materials is strictly regulated. See Safety Net #6 "Can This Go Down the Drain?" for more information on the Local Limits Program.



### Hazardous Waste Disposal

- Reduce volume of source and minimize generation of waste
- Designate a lab location in which to store hazardous waste for disposal
- Use "Hazardous Waste" label supplied by WASTe
- Use screw-capped leak-proof container for liquids
- Keep bottled liquid waste in secondary container (e.g., lab tray)
- Segregate waste by hazard class (Stanford segregation guide)
- Arrange for pickup within <u>9 months</u>\* of initial label date
  - \*90 days required for some hazardous chemicals\*
- Triple-rinse empty containers before disposal in trash
  - Some empty containers may require pick up by EH&S
- Dispose of syringes, glass pipettes and other sharps material in specially-designed rigid container

#### $\equiv$ UC Safety WASTe

#### Waste Accumulation Storage Tracking

Waste Accumulation Storage Tracking electronically (WASTe) facilitates the labeling, tracking, collection, and shipping of hazardous waste.

My Notifications
You have no new notifications

#### ehs.ucop.edu/waste

safetyservices.ucdavis.edu Search: Waste tracking



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#### STANFORD COMPATIBLE STORAGE GROUP GUIDE

Effective segregation in chemical storage reduces the risk of dangerous chemical reactions.

This guide must be used in conjunction with information from the manufacturer's safety data sheets and chemical-specific expert knowledge. This storage group system is intended to be used in research settings to store laboratory-scale quantities of chemicals.



Use ChemTracker to find a chemical's Storage Group - stanford.chemtracker.org



### Most Frequently Violated Safety Rules

- Hazardous wastes must be properly managed
- Labeling hazardous solutions
  - The full contents **spelled out in English not chemical formulas**
  - Initials of researcher and date of preparation
- Lab workers must wear protective clothing, minimum closed-toe and heel shoes and long pants or skirt
- Work with acids, bases, solvents, powders, pressure or vacuum requires lab coat or apron and eye protection
- Lab workers must be trained on all safety equipment and standard operating procedures (SOP)
- Labs must be "clean" and "without clutter" and no food or drink allowed
   UCDAVIS food Cience &



Vanessa Lieberman vmmorales@ucdavis.edu

