



2023 REFRESHER

# HAZARDOUS MATERIAL MANAGEMENT PROGRAM CONTACT INFORMATION

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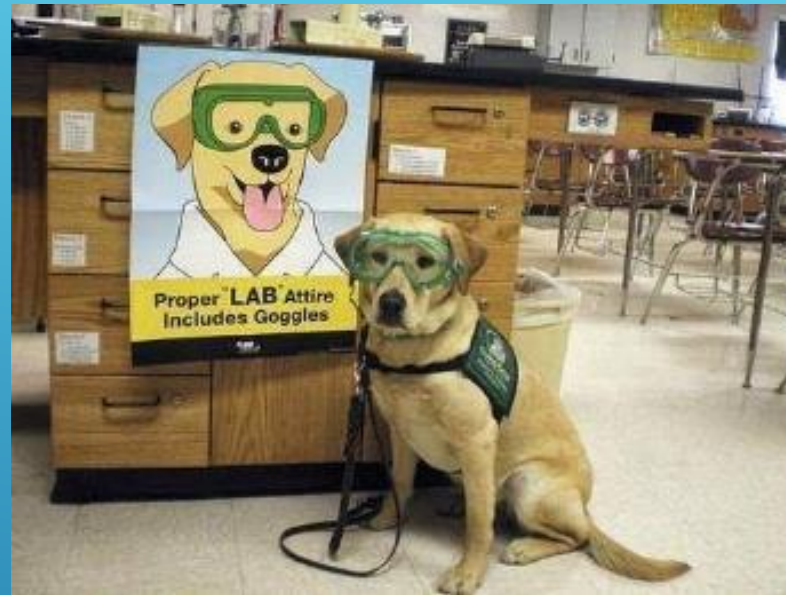
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# Hazardous Waste!



*What do you do with the hazardous waste you have generated?!*

# RCRA

## Resource Conservation and Recovery Act

RCRA encompasses EPA's solid and hazardous waste regulations

- ▶ “*Cradle to grave*”- the moment the waste is created until it is finally disposed of

# RCRA ENFORCEMENT

- ▶ Violation of RCRA can result in serious fines and possible imprisonment
- ▶ The penalties can range from \$50,000 per day up to a total fine of \$1 million and individuals can be imprisoned for up to 15 years



# HOW DO WE COMPLY?


We control waste production and properly manage waste stored on site:

1. Control
2. Manage
3. Minimize




# Hazardous Material Users and Waste Generators

University personnel who use or oversee areas where chemicals are used in normal work practices (e.g. faculty, students, teaching and research, facilities maintenance employees, and construction project managers, etc.) must be able to:



# Hazardous Material Users and Waste Generators

Understand the physical and chemical properties, health risks, and precautions required for safely handling each chemical and chemical mixture, by using reference books, articles, Safety Data Sheets (SDS), the UHCC Chemical Hygiene Plan, and/or regulatory guidance, etc.





- Learn and follow guidelines for proper:
    - Waste determinations
    - Container selection
    - Container Labeling
    - Satellite Accumulation Area storage
    - Waste minimization
- 
- A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, set against a blue gradient background.

# HAZARDOUS MATERIALS AND WASTE PLAN

HAWAII COMMUNITY COLLEGE

UNIVERSITY OF HAWAII



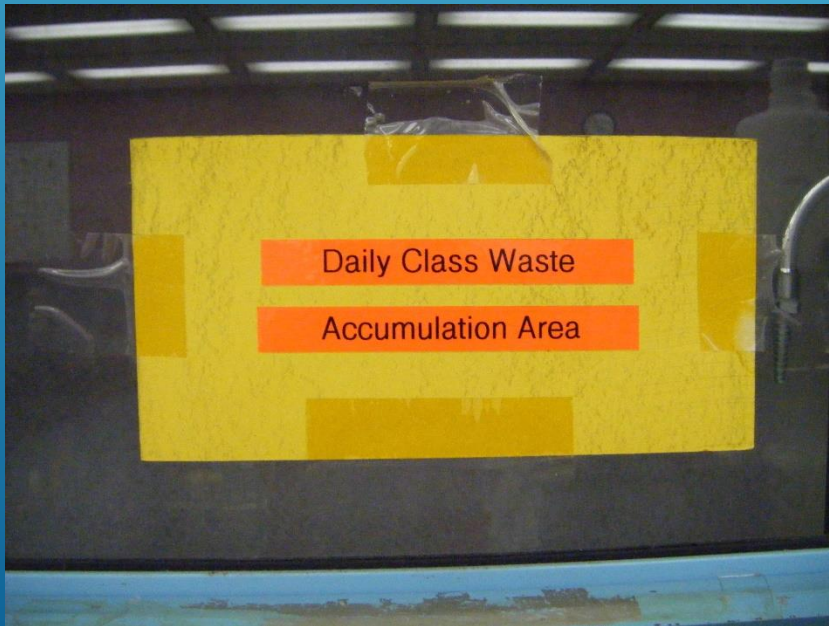
**Hazardous Materials/  
Hazardous Waste  
Management Program**



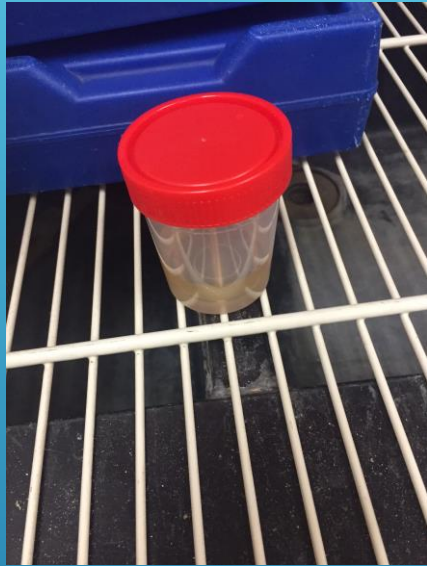
What is the 2 most IMPORTANT topics  
in Hazardous Waste Management ??

# DESIGNATION OF WASTE MANAGEMENT AREA

- ▶ All labs/shops should establish a temporary waste storage area near the point of generation.



# Label, Label, Label!



Waste or Materials?



**We constantly find old and expired chemicals in laboratories, and tons of unlabeled/unknown chemicals!**

**Please Label Everything and store it properly!**



- ▶ The Single Most Important Thing in the plan is to provide knowledge and knowledge is SAFETY !!!

**LABELS**


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If it is waste:

EPA 40 CFR 261.2 : person who generates solid waste as defined in 261.2 must determine if a waste is hazardous waste

262.11(a) : hazardous waste determination must be made at the point of waste generation

Labels must specify the words "Hazardous Waste"; the composition and physical state of the waste; the hazardous properties of the waste (e.g., flammable, reactive, etc.); and the name and address of the generator. Labeled with the date that the waste accumulation began on each tank or container.



If it is a hazardous material (product)

OSHA's Hazard Communication Standard (HCS), at 29 CFR 1910.1200(f)(5) states "... the employer shall ensure that each container of hazardous chemicals in the work place is labeled, tagged or marked with... (i) Identity of the hazardous chemicals...and (ii) Appropriate hazard warnings, or alternatively, words, pictures, symbols or combination thereof,...to...provide the employees with the specific information regarding the physical and health hazards of the hazardous chemicals."

29 CFR 1910.1200(f)(7) states, "The employer is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer...."



# HAZARDOUS WASTE LABELS



Item#

**Hawaii Community College**  
 State and federal law prohibit improper disposal.

Dept: \_\_\_\_\_ Building: \_\_\_\_\_ Rm: \_\_\_\_\_

Contact: \_\_\_\_\_ Ph#: \_\_\_\_\_

**Chemical Constituents**  
 (If mixture, list all constituents by percent volume.)  
 (Totals must equal or be greater than 100%)

\_\_\_\_\_ %

\_\_\_\_\_ %

\_\_\_\_\_ %

\_\_\_\_\_ %

\_\_\_\_\_ %

\_\_\_\_\_ %

\_\_\_\_\_ %

Total (>)

100% \_\_\_\_\_ %

**Physical State**

Gas      Solid  
             Liquid

# EXAMPLES OF PROPER LABELS

**Item Number** – This number should correspond to the item number on the waste inventory form.

**Building & Room** – Indicate the building and the room where waste is located.

**Department** – The Department responsible for the waste

**Contact & Phone #** - Contact person and phone number responsible for managing waste.

**Chemical Constituents** – List all constituents ensuring that the totals are equal or greater than 100%. Please do not use abbreviations.

**pH** – All liquids must have pH written on the tag before the waste can be picked up.

**Physical State, Hazard Class** – Complete appropriately, if need assistance, please call EHSO. (Base this characterization on the final composition of the waste, NOT the individual hazard classes of the contents.)

**CHEMICAL WASTE**  
**Hawaii Community College**

Item#

Dept: \_\_\_\_\_ Building: \_\_\_\_\_ Room: \_\_\_\_\_

Contact: \_\_\_\_\_ Ph#: \_\_\_\_\_

**Chemical Constituents**  
(If mixture, list all constituents by percent volume.)  
(Totals must equal or be greater than 100%)

\_\_\_\_\_ %  
\_\_\_\_\_ %  
\_\_\_\_\_ %  
\_\_\_\_\_ %  
\_\_\_\_\_ %  
\_\_\_\_\_ %

\_\_\_\_\_ pH (please list for all liquids)

**Physical State**  
 Gas  Solid  Liquid

**Hazard Class**  
 Flammable  Poison  Oxidizer  
 Reactive  Corrosive

# PROPER WASTE LABEL (CONT)

**Hazard Class: Is this waste EPA regulated hazardous waste or is it not EPA regulated hazardous waste. Call UHCC ESS for assistance.**

**EPA regulated hazard codes. Please mark accordingly for your waste stream. If any of these items are in your waste stream or exhibit these characteristics, please mark the appropriate item.**

**Hawaii Community College**  
120 W. Kawili Street, Hilo, Hawaii 96720  
(808) 974-7656

<b>Hazard Class</b>	<b>__RCRA</b>	<b>__NonRCRA</b>
<b>__Flammable D001</b>	<b>__Oxidizer D001</b>	<b>__Corrosive D002</b>
<b>__Reactive D003</b>	<b>__Toxic:....</b>	
<b>__Arsenic.D004</b>		<b>__Hexachlorobenzene.D032</b>
<b>__Barium D005</b>		<b>__Hexachlorobutadiene.D033</b>
<b>__Benzene.D018</b>		<b>__Hexachloroethane.D034</b>
<b>__Cadmium.D006</b>		<b>__Lead.D008</b>
<b>__Carbon Tetrachloride.D019</b>		<b>__Lindane.D013</b>
<b>__Chlordane.D020</b>		<b>__Mercury.D009</b>
<b>__Chlorobenzene.D021</b>		<b>__Methoxychlor.D014</b>
<b>__Chloroform.D022</b>		<b>__Methyl ethyl ketone.D035</b>
<b>__Chromium.D007</b>		<b>__Nitrobenzene.D036</b>
<b>__o-Cresol.D023</b>		<b>__Pentachlorophenol.D037</b>
<b>__n-Cresol.D024</b>		<b>__Pyridine.D038</b>
<b>__p-Cresol.D025</b>		<b>__Selenium.D010</b>
<b>__Cresol.D026</b>		<b>__Silver.D011</b>
<b>__2,4-D.D016</b>		<b>__Tetrachloroethylene.D039</b>
<b>__1,4-Dichlorobenzene.D027</b>		<b>__Toxaphene.D015</b>
<b>__1,2-Dichloroethane.D028</b>		<b>__Trichloroethylene.D040</b>
<b>__1,1-Dichloroethylene.D029</b>		<b>__2,4,5-Trichlorophenol.D041</b>
<b>__2,4-Dinitrotoluene.D030</b>		<b>__2,4,6-Trichlorophenol.D042</b>
<b>__Endrin.D012</b>		<b>__2,4,5-TP (Silvex).D017</b>
<b>__Heplachlor.D031</b>		<b>__Vinyl Chloride.D043</b>

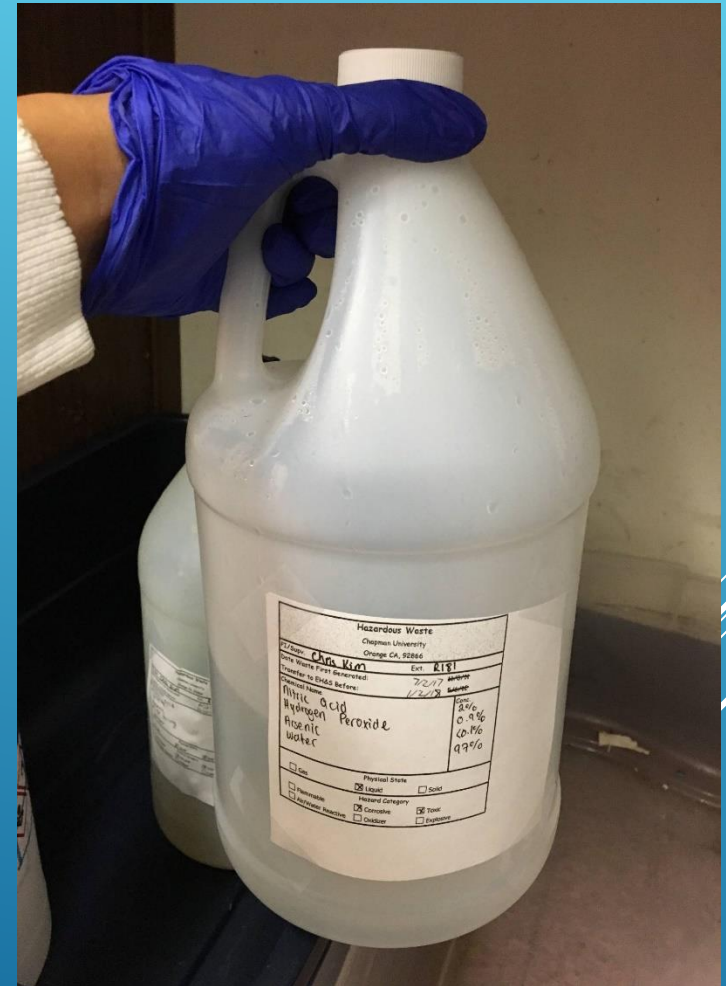
# HAZARDOUS MATERIAL INVENTORY

- ▶ Twice a year inventory.
- ▶ Oct 1 and May 1
- ▶ Keep it current. It is an OSHA requirement.
- ▶ Submit to VC and keep a copy of your inventory with your MSDS.



# WASTE CONTAINERS

- ▶ Waste in the hazardous waste storage areas must be marked with the date the waste began accumulating (the first drop) and labeled “Hazardous Waste” or must contain the contents of the waste
- ▶ Containers must be kept closed and secured except when adding or removing waste



# Waste Disposal

- No Hazardous Chemicals can go down the drains or in the trash!
- Absolutely no liquid can go in the trash



# What's Wrong Here?

3	Sheep brain, kidneys, eyeballs in buckets with Carolina Perfect Solution	Solid/liquid	6 buckets			
4	Acetonitrile waste	Liquid	4 Liters			what is the solution %
5	BaCl, NH <sub>4</sub> Cl, CuSO <sub>4</sub> , AgNO <sub>3</sub> , Pb(Oac) <sub>2</sub> , crystal violet	Solution	4 Liters			spell out, also how much water %
6	Cl, NO <sub>3</sub> , Cr <sup>4</sup> , IO <sub>3</sub>	Solution	4 Liters			spell out, also how much water %
7	Fast Blast DNA stain (Biorad)	Solution	2 Liters			constituents
8	Al <sup>3+</sup> , Cl <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , NH <sub>4</sub> <sup>+</sup> , H <sub>3</sub> , Cr <sup>4</sup> , Cu <sup>2+</sup> , Bp <sup>2+</sup> , PO <sub>4</sub> , Zn <sup>2+</sup>	Solution	3 Liters			spell out, also how much water %
9	Cu <sup>2+</sup> , Cd	Solution	3 Liters			
10	Dische, Cu <sup>2+</sup>	solution	2 Liters			in micro lab, pH 4
11	Organic Waste	Solution	3L			constituents
12	Aquous Waste (Chem 161,162) KNO <sub>3</sub> , PbCl <sub>2</sub> , AlCl <sub>3</sub> , cu, AgNO <sub>3</sub> ...	Solution	4L			
13	Iodine clock waste, SO <sub>4</sub> , I <sub>2</sub> , Starch, CuSO <sub>4</sub>	Solution	4L			
14	Organic Waste	Solution	3L			constituents

# Broken Glass and Pippete Tips

## Chemically Contaminated

*If the waste is contaminated with hazardous chemicals, it must be accumulated for proper disposal.*

1. Accumulate in a puncture resistant container (cardboard box, plastic container, etc.)
2. Fill out and attach a haz-mat forms, listing out all constituents of the waste
3. Submit for disposal

## Non-Contaminated

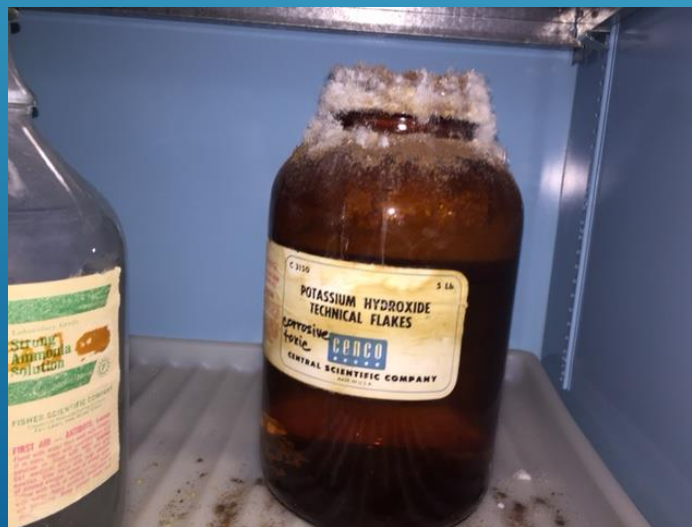
*If there is no chemical contamination, the waste can be accumulated or eventual disposal in the municipal trash*

1. Accumulate in a puncture resistant container (cardboard box, plastic container, etc.)
2. Label it as "Non-Hazardous"
3. Close the container or seal it with tape
4. Bring directly to a dumpster for disposal





# Laboratory / shop HOUSEKEEPING



# Questions ???

