

# *UAH GTA / GRA Lab Safety Training*

Presented by:

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UAHuntsville

Office of Environmental Health & Safety



# *Video*

- [Chemical Safety Board Video – University Lab Safety](#)

# *Purpose*


- Insure everybody on campus leaves as healthy and safe as when they arrive
- Insure Students are Prepared for work outside of the University
- Enhance the Sustainability of the Campus, the Environment, and UAH Facilities
- Meet Regulatory Requirements



# *Objectives*

Provide you information to learn when and how protect yourselves from typical chemical laboratory hazards

Provide guidelines for chemical handling – purchase, storage, use, disposal





# *Expectation*

- Each of you will take this information back to the lab and use it to empower yourselves and your students on how to maintain their own safety and to support sustainability of the environment



# *UAH Laboratory Safety*

[www.uah.edu/oehs](http://www.uah.edu/oehs) or 842-6053

# *Identify Hazards*

## Principles of hazard recognition

- Be aware of all potential hazards in a process/situation. Ex: potential for fire, toxic chemical exposure, electrical shock, explosive potential, chemical spray, other.
- Evaluate the potential for each
- Take protective measures to prevent exposure / injury. If unsure, ask the PI/Supervisor. Make sure the students are also aware of the potential hazards.
- Walk through the lab at the beginning and end of each day to inspect for potential EHS problems

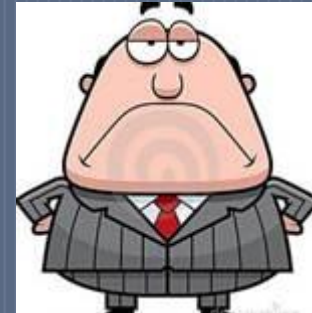
# Hazardous Material?

- OSHA 29 CFR 1910.1450 A chemical in which there is significant statistical evidence that acute or chronic health effects may occur in exposed employees.
- EPA 40 CFR 261.3
  - Listed Wastes
  - Characteristic Wastes
    - Flammable
    - Corrosive
    - Reactive
    - Toxic



# Finding Chemical Safety Information

- Immediate Supervisor
- Safety Data Sheets (SDSs)
- CRC Handbook
- Chemical Manufacturer
- Internet Resources
- OEHS



# Safety Data Sheets

- Chemical manufacturers, distributors, or importers must provide SDS as per the Hazcom Standard 1910.1200
  - When deciding what experimental processes will be used ensure that you have reviewed all SDS's and chemical hazards prior to the final decision to use the chemical
  - Substitute a less hazardous chemical whenever possible
  - Order exactly what you will need – hazwaste expense and risk of accidents increase significantly



# *Safety Data Sheets*

Employers must keep copies of the SDS's for each hazardous chemical used or produced in the work place and ensure that they are readily accessible during each work shift when employees are present



# Safety Data Sheets

- *Chemical Product and Company information*
- *Ingredients and composition*
- *Hazards identification*
- *First aid measures*
- *Fire fighting measures*
- *Accidental release info*
- *Handling and storage*
- *Exposure controls/ personal protection*
- *Physical and chemical properties*
- *Stability and reactivity*
- *Toxicological information*
- *Ecological considerations*
- *Disposal considerations*
- *Transport information*
- *Regulatory information*

# *Hazardous Chemical Categories*

## Physical Hazards

- Flammable
- Corrosive
- Reactive
  - Water reactive
  - Pyrophoric (Air reactive)
  - Strong oxidizer
  - Acid sensitive

## Health Hazards

- Asphyxiant
- Anesthetic
- Allergic sensitizer
- Systemic toxin
  - Teratogen
  - Carcinogen
  - Neurotoxin
  - Hepatotoxin
  - Nephrotoxin

# Flammable Chemicals

- **Flammable Chemical:** Chemicals with a flash point below 100F(OSHA).
  - **Flashpoint:** the minimum temperature at which a flammable or combustible liquids produce enough vapor to form an ignitable mixture with air. Needs ignition source to flash.
- |                            |                          |
|----------------------------|--------------------------|
| ○ Methyl alcohol (11.10 C) | ○ Acetaldehyde(-390 C)   |
| ○ Benzene(-11 °C)          | ○ Diethyl ether (-45 °C) |
| ○ Acetone(-18 °C)          | ○ Gasoline (-45 °C)      |



## *When Handling Flammable Chemicals*

1. Put flams in the flam storage cabinet when not in use. Store in a cool, dry, and well-ventilated place.
2. Minimize amounts of flam substances on the bench.
3. Do not work with or pour flam chemicals near an open flame or heat source.
4. Do not store flam chemicals with oxidizers.
5. Do not store flam chemicals in a ***non-approved*** flammable refrigerator.

# Handling Corrosive Chemicals

❑ Causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

- PH < or = to 2 or > or = to 12.5 (EPA)
- Includes both acids and bases
  - ❖ Don't store acids and bases together!
  - ❖ Add acids to water not the reverse. (Remember AA)

No  
Gloves !!!







# Reactive/Unstable Chemicals

- ❑ A substance in which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature (**OSHA**).

## Examples:

- Water Reactive (sodium metal)
- Air Reactive (Pyrophoric materials) (potassium sticks)
- Strong Oxidizing Agents (sulfuric acid)
- Acid Sensitive (strong bases)
- Peroxides (hydrogen peroxide)

# *Water Reactive Chemicals*

Chems that combine with water or moisture in the air to produce heat, flammable, explosive or toxic gases

Examples:

- Sulfuric acid
- Hydrochloric acid
- Sodium azide
- Alkali metals



# *Air Reactive Chemicals (Pyrophoric)*

- ❑ Chems that combine with water or moisture in the air to produce heat, flammable, explosive or toxic gases

Examples:

- Alkali metals
- White Phosphorus
- Metal Hydrides



# Peroxides and Peroxide Forming Chemicals

- Dangerous due to their extreme sensitivity to shock, heat and friction. Peroxides are highly flammable.
- React with oxygen in ambient air to form shock sensitive peroxide crystals.
- Opening or shaking the bottle may cause detonation.

Examples: Acrylonitrile, Butadiene, Styrene, Diethyl ether, Tetrahydrofuran, Divinyl ether, Sodium amide.



# *Toxic Chemicals*

Acute Toxicity: Caused by contact with a material for a short period of time.

Chronic Toxicity: Repeated contact with a material for long period of time.

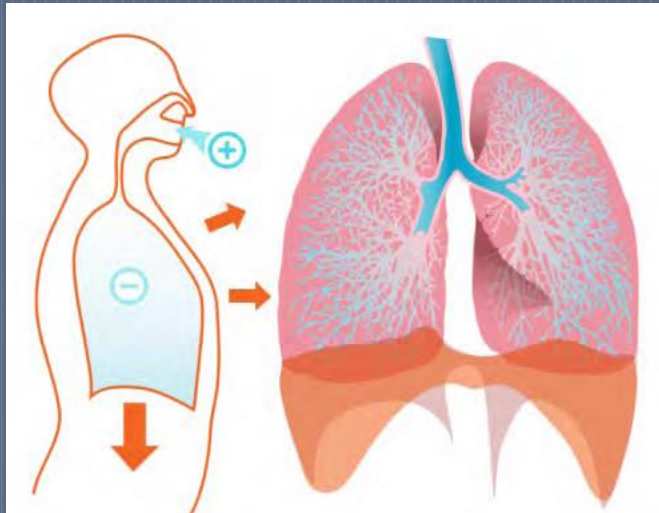
Quantified by:

LD<sub>50</sub>: the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals

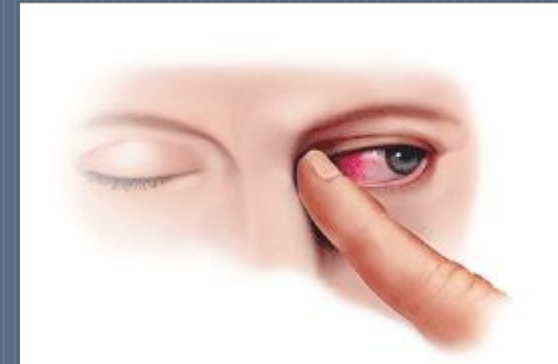
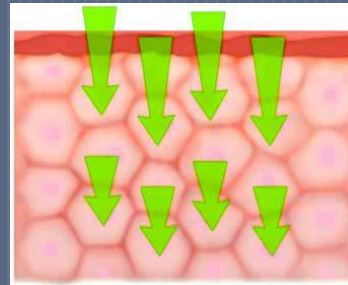
LC<sub>50</sub>: concentration of the chemical in air that kills 50% of the test animals in a given time (usually four hours).

# Routes of Chemical Exposure

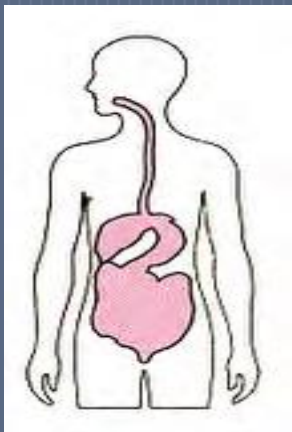
Inhalation



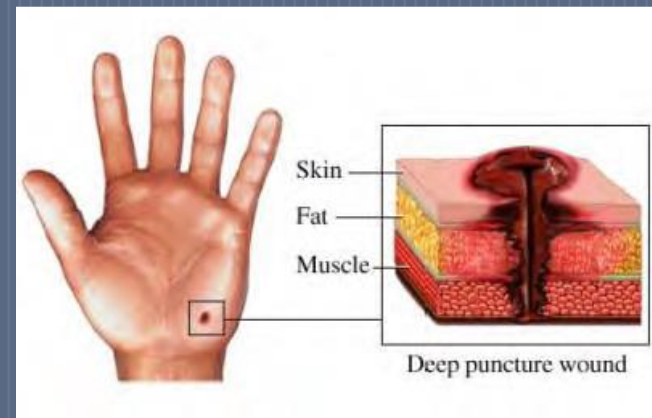
Absorption



Ingestion



Punctures



# *Chemical Exposure Limits - Air*

- **Permissible Exposure Limit (PEL):** OSHA maximum regulatory level of a chemical to which workers can be exposed to over an 8-hour workday, 5 days per week.
- **Threshold Limit Value (TLV):** Annually updated levels that are more current, but not regulatory. Published by the American Conference of Governmental Industrial Hygienists (ACGIH).
- **Threshold Limit Value-Ceiling Limit (TLV-C):** The “ceiling” level that cannot be exceeded at any time.
- **Short Term Exposure Limit (STEL):** Maximum concentration for a continuous exposure period of 15 minutes (with a maximum of four such periods per day, with at least 60 minutes between exposure period)



# *Purchasing and Receiving Chemicals*

- Review the Safety Data Sheet prior to purchasing
- Make sure you have the PPE and facilities to use and store the chemical
- Substitute for a less hazardous chemical whenever possible
- Only purchase the amount needed
- Purchase all chemicals using account code 7440
- Place the lab address and your name on the requisition

# Receiving Chemicals

- The package will be marked if shipped according to DOT regs 19 CFR 171.



- Check for signs of leakage
- Open under hood when necessary
- Add to your chemical inventory list
- Store according to compatibility
- Never transport without first contacting OEHS
- Never accept free chemicals!!!!

# Chemical Inventory

- Chemical Location
- Responsible person(s) for the area
- Emergency contact and phone number
- After hours contact
- Manufacturers name
- Chemical Name and CAS
- Container Size & Number of containers
- Provide inventory to OEHS annually (electronically) and as new or increased quantity of existing chemicals are added
- Place the inventory in the front of the SDS Binder



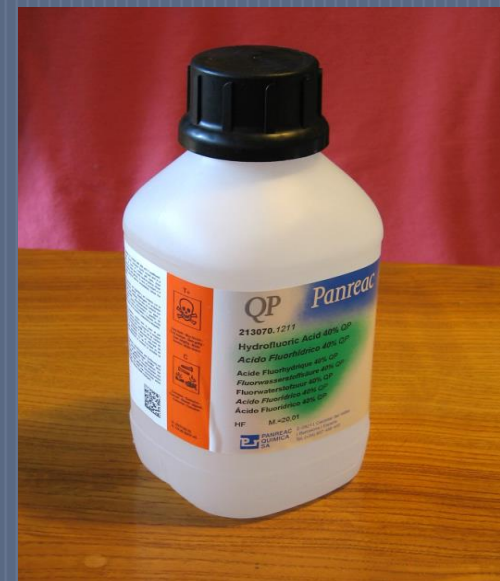
# Chemical Labeling

- Date all incoming chemicals upon arrival to the campus.
- Time sensitive substances must be tested and disposed of within the active life cycle and prior to becoming more hazardous. (THF, picric acid, peroxide formers)
- Working solutions must be clearly labeled identifying the contents, concentration, and date of creation.



# Container Labeling

- Inspect chemical bottle labels



# *Understanding the Labels*

- Read and reread labels carefully to make sure that you are using the right chemical.
- Know how to interpret data from a SDS.



# NFPA Diamond



## NFPA Rating Explanation Guide



### HEALTH HAZARD

- 4 = Can be lethal
- 3 = Can cause serious or permanent injury
- 2 = Can cause temporary incapacitation or residual injury
- 1 = Can cause significant irritation
- 0 = No hazard

### FLAMMABILITY HAZARD

- 4 = Will vaporize and readily burn at normal temperatures
- 3 = Can be ignited under almost all ambient temperatures
- 2 = Must be heated or high ambient temperature to burn
- 1 = Must be preheated before ignition can occur
- 0 = Will not burn

- ALK = Alkaline
- ACID = Acidic
- COR = Corrosive
- OX = Oxidizing
- = Radioactive
- = Reacts violently or explosively with water
- = Reacts violently or explosively with water and oxidizing

- 4 = May explode at normal temperatures and pressures
- 3 = May explode at high temperature or shock
- 2 = Violent chemical change at high temperatures or pressures
- 1 = Normally stable. High temperatures make unstable
- 0 = Stable

### SPECIAL HAZARD

### INSTABILITY HAZARD

*This chart for reference only - For complete specifications consult the NFPA 704 Standard*

# Finding Chemical Information

## Product Labels

**CYCLOHEXANE**  
TOTAL R11; R39; R66; R67; R60/62; S9; S16; S25; S33; S60; S61; S62

**Content: cyclohexane**  
R11: Facilement inflammable. R39: Irritant pour la peau. R65: Neuff peut provoquer une atteinte des poissons en cas d'egargerie. R67: L'inhalation de vapours peut provoquer une irritation de la gorge. R60/62: Très toxique pour les organismes aquatiques, peut atteindre des effets néfastes à long terme pour l'environnement aquatique. S9: Conserver le récipient dans un endroit bien ventilé. S16: Conserver à l'écart de toute flamme ou source d'ignition. Ne pas fumer. S25: Éviter le contact avec les yeux. S33: Éviter l'accumulation de charges électrostatiques. S60: Éviter le contact et non ne pas verser, en cas de débordement. S61: Éviter le contact dans l'environnement. Consulter les indications spécifiques liées de données de sécurité. S62: En cas d'égargerie, ne pas faire vomir. Consulter immédiatement un médecin et lui montrer l'étiquette ou l'étiquette.

**Contains cyclohexane**  
R11: Highly flammable. R39: Irritating to skin. R65: Harmful; may cause long damage if swallowed. R67: Vapours may cause dizziness and disorientation. R60/62: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes. S33: Take precautionary measures against static discharges. S60: This material and its container must be disposed of in accordance with the instructions on the label. S61: Avoid contact with the environment. S62: In case of spillage, do not induce vomiting; seek medical advice immediately and show this container or label.

**Enthalp Cyclohexan**  
R11: Leichtentzündlich. R39: Reizt die Haut. R65: Gesundheitsschädlich; kann bei Verschlucken Langzeitschäden verursachen. R67: Dämpfe können Schwindel und Orientierungsverlust verursachen. R60/62: Sehr giftig für Wassorganismen. Kann in Gewässern langfristige schädliche Wirkungen haben. S9: Behälter an einem gut gelüfteten Ort aufbewahren. S16: Von Zündquellen fernhalten - Nicht rauchen. S25: Bewahrung vor dem Augen berühren. S33: Maßnahmen gegen elektrostatische Aufladungen treffen. S60: Dieses Produkt und sein Behälter sind als gefährlicher Abfall zu entsorgen. S61: Freisetzung in die Umwelt vermeiden. Die weiteren Anweisungen entnehmen Sie bitte dem Etikett. S62: Bei Verschlucken kein Erbrechen herbeiführen. Sofort ärztliche Hilfe einholen und Verpackung oder diesen Etikett vorzeigen.

**Cyclohexan**  
R11: Tönderend brandbaar. R39: Lichteel irriterend. R65: Langdurig schadelijk; kan bij inslikken ernstige of blijvende schade veroorzaken. R67: Dampfen kunnen schwindel en oriëntatieverlies veroorzaken. R60/62: Zeer giftig voor viswaterorganismen. Kan in ecosystemen langdurig schadelijke effecten veroorzaken. S9: An een goed gellüftede plaats bewaren. S16: Van vlambronnen en ontstekingsbronnen afhouden. S25: Bescherming van de ogen vermijden. S33: Maatregelen tegen elektrostatische Aufladungen treffen. S60: Dit product en zijn behälter worden als geöföndert afval te behandelen. S61: Het milieu te beschermen. De verdere aanwijzingen vindt u op het etiket. S62: Bij verslucten niet braken opwekken, direct een arts raadplegen en de verpakking of het etiket tonen.

EC No: 203-808-2 UN1145 CYCLOHEXANE  
Total Fluide - 61, Esplanade du Général-de-Gaulle - La Defense 10 - F-92507 Paris La Defense - France  
Tel: +33(0)1.41.24.23.64 - Tél Urgence / Emergency: +33(0)1.41.24.66.00  
www.totalsolubles.fr

**F0: Neut**  
EN: Harmless  
DE: Gesundheitlich  
NL: Gevaarloos  
IT: Neutro

**F1: Facilement inflammable**  
EN: Highly flammable  
DE: Leichtentzündlich  
NL: Tönderend brandbaar  
IT: Facilmente infiammabile

**F2: Dangereux pour l'environnement**  
EN: Dangerous for the environment  
DE: Umweltgefährlich  
NL: Milieugevaarlijk  
IT: Pericoloso per l'ambiente

**Bevat cyclohexaan**  
R11: Lichtentzündend. R39: Lichteel irriterend voor de huid. R65: Schadelijk; kan langdurige verwondingen aan veroorzaken. R67: Dampfen kunnen schwindelgevoel en oriëntatieverlies veroorzaken. R60/62: Zeer giftig voor in het water levende organismen. Kan in het opwater milieu op lange termijn schadelijke effecten veroorzaken. S9: Op een goed gellüftede plaats bewaren. S16: Van vlambronnen en ontstekingsbronnen afhouden. S25: Bescherming van de ogen vermijden. S33: Maatregelen treffen tegen ontladungen van elektrostatische. S60: Deze vöer en de verpakking zijn geöföndert afval afgeven. S61: Verslucten niet braken in het milieu. Vraag een arts raadplegen op specifieke instructies veiligheid. S62: Bij verslucten niet braken opwekken, direct een arts raadplegen en de verpakking of het etiket tonen.

**Contiene ciclohexano**  
R11: Facilmente infiammabile. R39: Irritante per la pelle. R65: Nocivo; può causare danni al pollame in caso di ingestione. R67: L'inhalazione dei vapori può provocare irritazione a lungo termine. R60/62: Altamente tossico per gli organismi acquatici, può provocare a lungo termine effetti negativi per l'ambiente acquatico. S9: Conservare il recipiente in luogo ben ventilato. S16: Conservare lontano da fiamme e scintille. Non fumare. S25: Evitare il contatto con gli occhi. S33: Evitare l'accumulo di cariche elettrostatiche. S60: Questo materiale e il suo contenitore devono essere smaltiti come rifiut pericoloso. S61: Non disperdere nell'ambiente. Riferirsi alle istruzioni speciali scritte sull'etichetta o sul foglio di sicurezza. S62: In caso di ingestione non provocare vomito. Consultare immediatamente il medico e mostrargli il contenitore e l'etichetta.

71536-EU1

**MATERIAL SAFETY DATA SHEET** Page 1  
**Metal Cleaner**

HEALTH 1  
FLAMMABILITY 2  
CORROSIVITY 3  
ENVIRONMENTAL 4

Revision: 11/07/96  
Printed: 05/14/00  
Total Count: 1158/956

**1. Product and Company Identification**

Product Code: D03-79  
Product Name: Metal Cleaner  
Manufacturer Name and Address: PPG Industries, Inc.  
4325 Riverchase Drive  
P.O. Box 9  
Allison Park, PA 15101  
Emergency Contact 1: Emergency Medical/Spill Info: (800)842-1300  
Information Contact: Technical Information: (714)953-2610  
Chemical Family: AOD

**2. Composition/Information on Ingredients**

Ingredient Component (Chemical Name)	CAS #	Percentage	OSHA TWA	ACGIH TWA	Other Limit
1. Sodium Hydroxide	1310-73-2	30.0 - 30.0 %	50/25 ppm	50/25 ppm	NIOSH
2. Sulfuric acid (anhydrous)	7704-94-2	10.0 - 10.0 %	Not Evald.	Not Evald.	NIOSH
3. Phosphoric acid	7664-93-2	20.0 - 40.0 %	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	NIOSH

**3. Hazards Identification**

**Emergency Overview**  
Harmful or fatal if swallowed. May be corrosive. This product contains a material which causes skin burns. This product contains a material which causes irreversible eye damage. May be harmful if absorbed through the skin. Vapor and/or spray may be harmful if inhaled. Vapor irritates eyes, nose, and throat. Vapor present at elevated temperatures irritates eye, nose, and throat.

**Route(s) of Entry:** Inhalation; No Skin; No Eye; No Ingestion; No

**Potential Health Effects (Acute and Chronic)**  
INGESTION: Harmful or fatal if swallowed.  
EYE CONTACT: This product contains a material which causes irreversible eye damage.  
SKIN CONTACT: May be corrosive. This product contains a material which causes skin burns. May be harmful if absorbed through the skin.  
INHALATION: Vapor and/or spray may be harmful if inhaled. Vapor irritates eyes, nose, and throat. Vapor present at elevated temperatures irritates the respiratory system and permanent brain and nervous system damage.  
CHRONIC OVEREXPOSURE: Avoid long-term and repeated contact. This product contains an ethylene ether glycol ether and/or acetate which has been shown to cause adverse effects on the kidneys, liver, blood and blood-forming tissue. This product contains diethylene glycol monomethyl ether (DEGME). DEGME contained in working water at low levels by rate for 30 days caused injury to either the liver, kidney, spleen, or testes.

Controlled by V Systems, Inc. MSDS 024, 81 V Systems, Inc. MB Form 1



NFWA Fire Diamond

MSDS / SDS



# Chemical Storage

Hazardous chemicals must be stored according to compatibility and in chemical safety cabinets or in the ventilated base cabinet of the fume hood.

In general chemicals should only be stored with compatible substances according to the following categories (note: always consult the MSDS):

		1	2a	2b	3	4	5a	5b	5c	6
		Flammable Liquids	Acids, Inorganic	Acids, Organic	Alkalis (Bases)	Oxidizers	Poisons, Inorganic	Poisons, Organic	Schedule 1 Poisons	Air / Water Reactives
1	Flammable Liquids	✓	✗	✓	✗	✗	✗	✓	✗	✓
2a	Acids, Inorganic	✗	✓	✗	✗	✓	✗	✗	✗	✗
2b	Acids, Organic	✓	✗	✓	✗	✗	✗	✗	✗	✗
3	Alkalis (Bases)	✗	✗	✗	✓	✓	✓	✗	✗	✗
4	Oxidizers	✗	✓	✗	✓	✓	✓	✗	✗	✗
5a	Poisons, Inorganic	✗	✗	✗	✓	✓	✓	✗	✗	✗
5b	Poisons, Organic	✓	✗	✗	✗	✗	✗	✓	✗	✗
5c	Schedule 1 Poisons	✗	✗	✗	✗	✗	✗	✗	✓	✗
6	Air / Water Reactives	✓	✗	✗	✗	✗	✗	✗	✗	✓

KEY - ✗ = NOT compatible – do NOT store together    ✓ = Maybe compatible – consult MSDS

# *Reduce Exposure to Hazards*

- No. 1: Engineering Controls : remove or reduce hazard by substitution, isolation, or ventilation. Ex: Hood.
- No. 2: Admin Controls: Reduce exposure time, training, good work practices, hazard recognition, control lab entry.
- No. 3 PPE: Wear all required PPE and refer to the MSDS for additional information on protecting yourself and students

# *Fume Hoods*

- Do not use fume hood as storage area
- Look for air flow meter to verify airflow
- During use:
  - Work 6" within the fume hood, verify airflow
  - Avoid unnecessary storage of materials inside the hood
- Close the sash when not in use
- Do not ignore/silence alarm system
- After use:
  - Lower the hood sash
  - Cleanup all materials and spills inside the hood

# Fumehood Use (continued)

- It is mandatory for all scientific experiments generating corrosive, flammable or toxic gases to be performed in a chemical hood.
- Assemble and operate all pressurized experiments inside the chemical fume hood to reduce injury from explosion or implosion of equipment.
- Grouping students for lab experiments may also be necessary to reduce gas emissions from experiments.



# *Administrative Controls*

- Implement operational procedures
- Ensure chemicals are closed tightly
- Label all chemicals and working stocks
- Store chemicals in cool, dry, well ventilated location. Not on counter tops.
- Inventory management. Dispose of time-sensitive materials, keep an active inventory list, maintain SDS, contact OEHS for chemical management questions.

# Personnel Protective Equipment

- Select PPE based on the chemical
- Mandatory PPE
  1. *lab jacket or apron*
  2. *face shields and or goggles*
  3. *gloves suitable for the chemical in use*
  4. *closed toed shoes made of durable material*



# *Exposure Prevention*

- These activities are prohibited to prevent chemical exposure in labs



- Do not smell or taste any chemicals





# *Tie Back Loose Hair*



- Dangling hair can catch fire or can fall into a chemical solution
- Burning hair **REALLY STINKS!**

# Exposure Prevention - Continued

- Wash hands and arms before leaving the lab, even if gloves are worn
- Change or dispose of gloves when traveling between labs
- Wash lab jackets separately from other laundry
- Never wear lab jackets where food is consumed
- Never pipette by mouth
- Keep all lab doors in MSB, OB, SCST closed to keep HVAC operating properly
- Never work alone especially after hours or on weekends



# Housekeeping

- Maintain a current chemical inventory and MSDS's
- Keep all chemical containers closed while not in use.
- Keep aisles clear and all work surfaces free of chemical residues
- Avoid slipping hazards. Keep floor free from debris and spilled materials



# *Housekeeping*

- Never store materials on the floor or hazardous liquids above eye level
- Use non chromate glassware cleaners for easy disposal
- Store all solvents in the cabinets under the hood and properly label all chemicals
- Maintain Closed containers unless actively adding

# Housekeeping, contd.

- Glass - Dispose in designated glass waste containers
- Sharps - Dispose in sharps containers
- Cylinders - Chain to a wall and store with valve cover on, label as empty
- Electrical - Use outlets appropriate for instrument, don't overload circuits



# Chemical Waste Disposal

- All chemical waste must be labeled
- Collect chemical waste in a designated area
- Contact OEHS when there is waste that requires pick-up
- Complete a UAH Hazardous Materials Manifest and submit it to the OEHS



## *Housekeeping, contd.*

- Remove broken equipment through surplus property procedures! Do not place in hallways or other areas
- All safety showers and eyewashes must be clear of lab furniture and electrical equipment
- Cylinders - Chain cylinders to a wall or non-movable table; Store with valve cover on; label when empty and call CRS for pickup
- Electrical - Use outlets appropriate for instrument, don't overload circuits

# Chemical Spill Clean-up

- Small spills (<5 liter) of materials that do not require respiratory protection
  - ❑ spill kits are available in most campus chemical stock rooms and in areas of high chemical use
  - ❑ departments are responsible for providing spill kits
  - ❑ Call Campus Police at 6911 for all immediate response services





# *Chemical Spill Clean-up*

- Public Safety Officers must clear the area, collect chemical information and contact the OEHS
- If there are injured persons and the chemical is not identifiable pull the fire alarm while evacuating the area and call 824-6911.



# Daily, Weekly AND Monthly Safety Checks

- Eye wash (purge)
- First Aid Kit
- Chemical storage
- Fire extinguisher
- Tubing, pressurized connections
- Fume Hood and Biosafety Cabinets



# *Chemical Fume Hood Failure*

## Emergency procedures for hood failure

- ❖ Stop experiment !!
- ❖ Contact responsible professor and OEHS/Public Safety immediately.
- ❖ IF SAFE - Move work to other working hoods in immediate area.
- ❖ Hood failure after hours and during weekends will result in no maintenance repair until next business day
- ❖ Hood repair and ready to use steps

# *Other Prudent Safety Practices*

- *When leaving lab close hood sash completely*
- *If low flow alarm on hood sounds call x6490 immediately to report it to maintenance*
- *Do not use any hood having low flow until OEHS has approved its use*
- *Do not tape paper over lab windows; this impedes emergency responders and inhibits visual safety verification of the lab*
- *Lasers require safety measures that do not include blocking the window*

# *Other Safety Practices*

- Inspect work area daily
- Be an observer - stay alert
- Housekeeping, Housekeeping, Housekeeping
- Best safety device - Plan ahead
- If you're not sure - Ask someone!!
- Report Injuries/Incidents/Illnesses to lab supervisor
- Report safety issues to the OEHS

# *Leaving the Lab?*

Turn Off:

- Gas
- Heating Sources
- Water
- Power Supplies
- Vacuum Lines
- Compressed Gas



# *Leaving the Lab?*

- Identify and store chemicals and waste
- Decontaminate work surfaces and equipment
- Return unused equipment, apparatus, etc.
- Leave lab coat in the lab
- Wash/dry your hands
- Close and lock door

# *Conclusion – You Should Now Know How to:*

- Identify hazardous materials
- Personal protective equipment requirement
- Safety data sheets
- Housekeeping
- Chemical waste
- Sharps waste



# Acknowledgement of Training

- Select this link to acknowledge receipt of training
- Direct questions to the OEHS at 824-6053 or at get additional information at [www.uah.edu/oehs](http://www.uah.edu/oehs) or contact your supervisor.