

ART SAFETY



PRESENTED BY
THE ECU OFFICE OF
ENVIRONMENTAL
HEALTH AND SAFETY



ART SAFETY

- Common misconception that Art is non-hazardous occupation
- Encounter same hazards as found in industry
- Mindset may place personnel at greater risk

PROGRAM OUTLINE

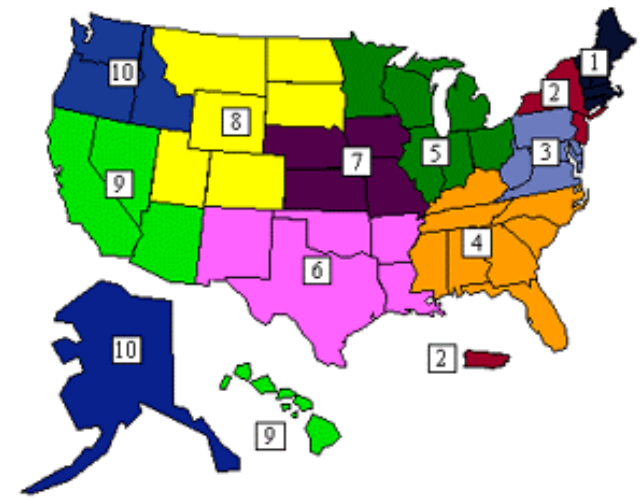
- Regulatory Review
- Types of Hazards
- Effects of Exposure
- Routes of Exposure
- Hazard Identification (MSDS & Labels)
- Hazardous Materials Storage
- Protection from Hazards
- Common Issues
- Questions

OSHA REGULATIONS AND EPA INITIATIVE

- Colleges and Universities are required to comply with all applicable safety and environmental requirements like industry
- OSHA standards deal primarily with employee safety (www.osha.gov)
- EPA regulations deal primarily with protection of the environment (www.epa.gov)
- Tort liability addresses non-employee safety

OSHA REGULATIONS AND EPA INITIATIVE

- Subject to inspection by both agencies
- Subject to federal and state agency inspection
- EPA has already stepped up enforcement actions in Regions 1, 2 and 3
- University of Hawaii fined \$1.8 million
- Boston College and Stanford fined \$1 million
- Yale received a \$300,000 fine
- Common deficiencies
- Provisions for fine and imprisonment of individuals



ART SAFETY

- Know the hazards and how to protect yourself (Hazard Communication)
- Must be incorporated into all activities
- If activity cannot be done safely then it should not be done at all
- Must become part of the curriculum
- Preparation for the “REAL WORLD”
- Reflection on Institution and Faculty

TYPES OF HAZARDS

- **CHEMICAL** – paints, dyes, glazes, inks, solvents, clay, metals
- **PHYSICAL** - heat, lifting, machinery, tools, noise
- **ERGONOMIC** – work stations, tools
- **RADIATION** – lasers, welding, kilns
- **BIOLOGICAL** – plant products, animal skins, bone, hair, blood borne pathogens

EFFECTS OF EXPOSURE

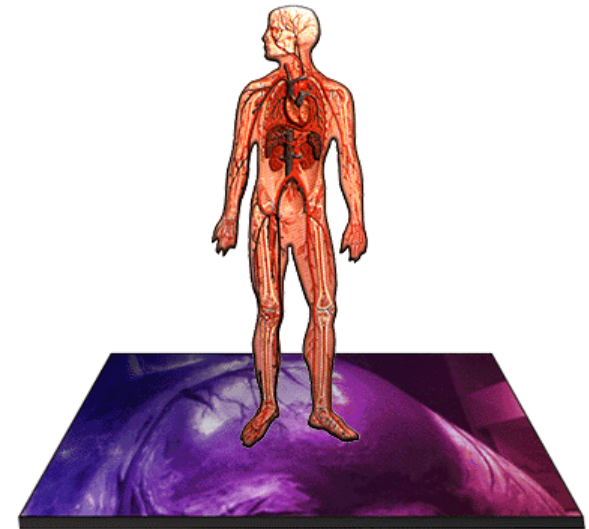
- **ACUTE** - direct threat that shows up almost immediately after exposure such as burns from contact with a corrosive chemical.
- **CHRONIC** - result of repeated exposure that occurs over months or years and includes cancer and some allergic reactions.

RISK FACTORS

- Toxicity
- Level, Duration and Frequency of Exposure (minimize exposures)
- High Risk Groups (pregnant women, children, smokers)
- Personal Susceptibility

ROUTES OF EXPOSURE

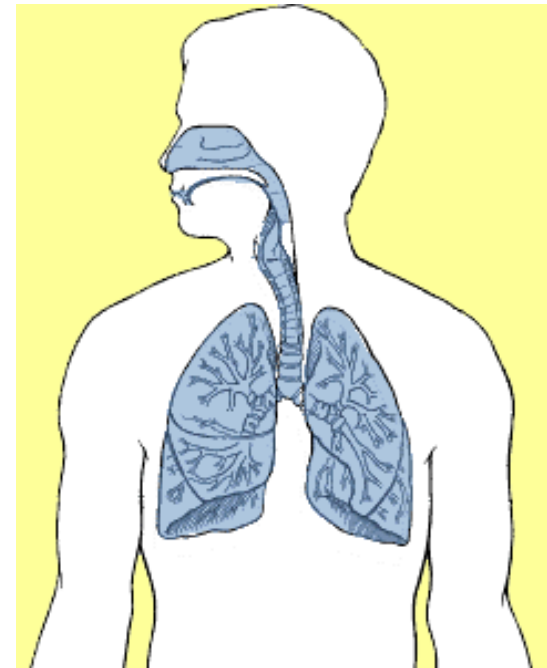
- INHALATION
- ABSORPTION
- INGESTION
- INJECTION



ROUTES OF EXPOSURE

INHALATION:

- Primary Route of Entry
- Airborne contaminants such as gases, vapors and particulate matter that enter directly into lungs
- Respiratory protection or specialized exhaust may be necessary.



ROUTES OF EXPOSURE

ABSORPTION:

- Can occur very quickly through cut or abraded skin
- Many compounds can be absorbed through intact skin (methyl mercury incident)
- Absorption through eyes are of great concern due to their sensitivity and splash hazards
- Barrier protection (such as gloves) and personal hygiene are the primary control measures.

ROUTES OF EXPOSURE

INGESTION:

- Includes direct tasting of chemicals.
- More often occurs when contaminated items are placed in the mouth.
- Purpose for banning food, drink, tobacco, and cosmetics in the studio/work areas.
- Personal hygiene, labeling and housekeeping are very important to ingestion hazard control.



ROUTES OF EXPOSURE

INJECTION:

- Places contaminants in direct contact with the blood stream. These cuts are difficult to clean.
- Needle sticks.
- Deep cuts involving contaminated glass or plastic shards or similar sharp items.

RESPIRATORY PROTECTION

- Use approved through EH&S.
- Must be part of ECU Respiratory Protection Program.
 - Medical Clearance
 - Training
 - Annual Fit Test

VENTILATION

- **Do Not Block Air Supply or Return Grills.**
- **Do Not Remove Ceiling Tiles.**
 - If missing, put in a work order.
- **Use Toxic or Odorous Chemicals in Fume Hoods.**
- **Canopy Hoods are for Heat Removal Only.**
- **Local Exhaust for Point Source Control.**

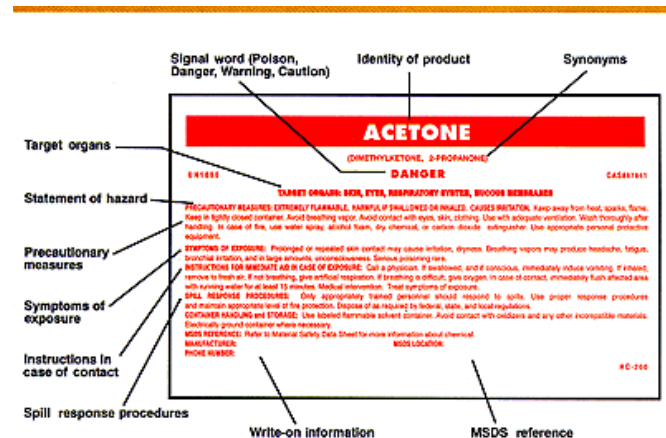


HAZARD IDENTIFICATION

- INVENTORY
- SDS's (Safety Data Sheets)
- LABELS

Safety Meeting Reprints MSDS

Section	Content
1. IDENTIFICATION	
2. HAZARD IDENTIFICATION	
3. COMPOSITION AND INFORMATION ON INGREDIENTS	
4. FIRST AID MEASURES	
5. FIRE FIGHTING MEASURES	
6. ACCIDENT AND SPILL RESPONSE	
7. HANDLING AND STORAGE	
8. EXPOSURE CONTROLS AND PERSONAL PROTECTION	
9. PHYSICAL AND CHEMICAL PROPERTIES	
10. STABILITY AND REACTIVITY	
11. TOXICOLOGICAL INFORMATION	
12. ECOLOGICAL INFORMATION	
13. DISPOSAL CONSIDERATIONS	
14. TRANSPORT INFORMATION	
15. REGULATORY INFORMATION	
16. OTHER INFORMATION	



MATERIALS INVENTORY (CHEMICALS)

- Identifies materials you have.
 - Chemical inventory list are required for each studio/shop area.
- Identifies location and quantity of each.
- Do you need all the materials you have on hand?
- Minimize inventory.

HAZARD IDENTIFICATION SDS's

- Chemical information sheets that include chemical ID, physical characteristics, hazardous ingredients, health hazards, handling precautions, first aid, reactivity data and control procedures.
- Must have a sheet for every hazardous chemical on site and must be accessible to every employee during the hours the employee is allowed to work.

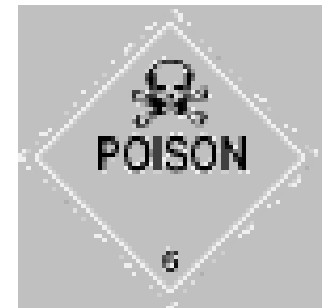
HAZARD IDENTIFICATION LABELS

- All containers must be properly labeled.
- Labels must include:
 - Identity of the material.
 - Hazard warnings.
 - Responsible individual.
- Identity of material must be the complete name as it appears on the original label or MSDS.
- Abbreviations and/or chemical formulas must not be used as primary identification.

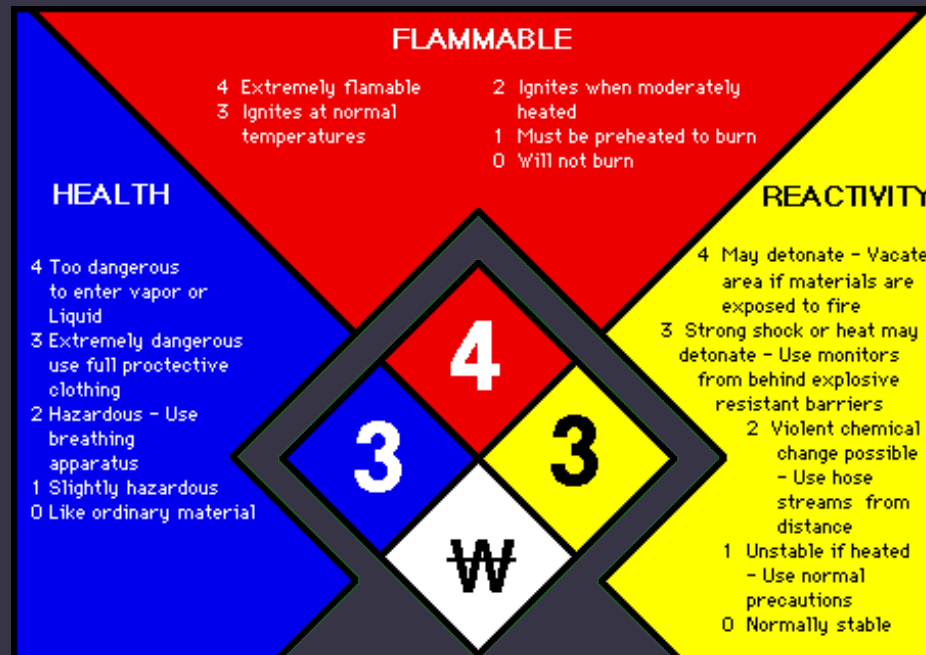
HAZARD IDENTIFICATION LABELS

- Appropriate hazard warnings include DOT hazard classes, NFPA Hazard Diamond, or a descriptive statement of the hazards
- Whichever method is employed, it must be used consistently throughout the labs and all workers must be familiar with the method

EXAMPLES OF DOT LABELS



NFPA DIAMOND



HAZARDOUS MATERIALS STORAGE

- All hazardous materials must be stored according to compatibility so that accidental mixing does not occur. (Applies to gas cylinders as well)
- Use only appropriate, compatible containers. (NO MILK JUGS, food containers, drink bottles, etc.)
- Minimize chemicals in inventory that are not used or not needed.
- Flammable storage cabinets.

HAZARDOUS MATERIALS STORAGE

- Containers should be inspected periodically and at least annually to assure container and label integrity
- Keep all containers closed except when in use
- Secondary containment can prevent serious spills and subsequent reactions
- Prior to the end of each semester or upon the departure of personnel, all remaining hazardous materials should be properly identified with disposition to storage or waste disposal

You Might Have A Hazardous Waste If

- The Waste Chemical is listed by the EPA as a Hazardous Waste (see EH&S web site for a list of these wastes)
- A compound or solution that is:
 - Corrosive
 - Toxic
 - Reactive
 - Flammable

DARKROOM WASTES

- When ever possible you should use an alternative to generating darkroom wastes such as digital photography.
- Used fixer solution is to be poured into the silver recovery unit located in the Jenkins Art photo studio.
- Insure that all containers are labeled properly.

STUDIO WASTES

- All liquid wastes are to be placed in container in studio.
- Rags containing wastes are to be placed in Rag Cans.
- Paint and ink is to be placed in the hazardous waste container designated for liquids only.
- **DO NOT** place trash, metal, glass, or sharps in flammable rag cans.

CHEMICAL WASTE CONTAINERS

- Collect in clean chemical containers, compatible with collected material.
- Containers must have a tight fitting screw on cap that will not leak if tipped. (No milk jugs, food containers, drink bottles, etc.)
 - EH&S will provide you a container. Contact 328-6166.
- Keep container exterior free of damage, spill material, or contamination.
- Do not mix incompatible wastes.

SATELLITE ACCUMULATION

- If you accumulate waste, you are required to adhere to all EPA regulations.
- Noncompliance with any hazardous waste regulation may result in substantial fines and penalties for the University and individual instructors and/or students.

SATELLITE ACCUMULATION

- Waste must be properly segregated and stored according to compatibility
- Wastes must be stored with a tight fitting screw on cap or lid and be free from leaks, damage or outside contaminants
- Kept in designated area – preferably with secondary containment
- Every container must remain closed except when adding waste (in fume hood)
- Must be marked with accumulation start date

SATELLITE ACCUMULATION

- Wastes can only be accumulated for up to one year.
- Once a chemical is designated a “waste” or when the first drop of waste has been put into the container, a “hazardous waste” tag must be completed and placed on that container.
- EH&S must be notified when containers are $\frac{3}{4}$ full.

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HAZARDOUS WASTE LABELING

- All Hazardous Waste containers must be properly labeled with EH&S tags.
 - These can be found on the EH&S website.
- **DO NOT** use chemical formulas or abbreviations.
- Tags must be completed and signed by the generator.
- Attach the tag to the container with string, wire or rubber band.
- Inspect label integrity and replace if damaged.

Hazardous Waste Disposal

- Ensure that wastes are properly packaged, stored, and labeled.
- Complete the waste pick-up request form and email to safety@mail.ecu.edu.
- Provide your name, phone #, location, identity, and amounts of waste.
- Waste pick-ups are conducted every Thursday.



NO chemicals are to be discharged into the sewer system or thrown in the trash without EH&S approval!!

PROTECTION FROM HAZARDS

- Hazard Assessments/Safety Plans
- Substitution
- Work Practices
- Engineering Controls
- PPE
- Personal Hygiene
- Emergency Procedures

ENGINEERING CONTROLS

- **General Ventilation (comfort)**
- **Dilution Ventilation**
- **Local Ventilation**
- **Design, Operation and Maintenance**

PERSONAL PROTECTIVE EQUIPMENT

- Proper selection (compatibility, fit, comfort)
- Proper use (training)
- Storage
- Maintenance

EMERGENCY RESPONSE

- Know how to respond to an emergency before the emergency occurs.
- Keep the Emergency Procedures near the phone and know what to do and who to contact.
- Have plans in place for fire, spills, severe weather, ventilation system failure, etc.

COMMON ISSUES

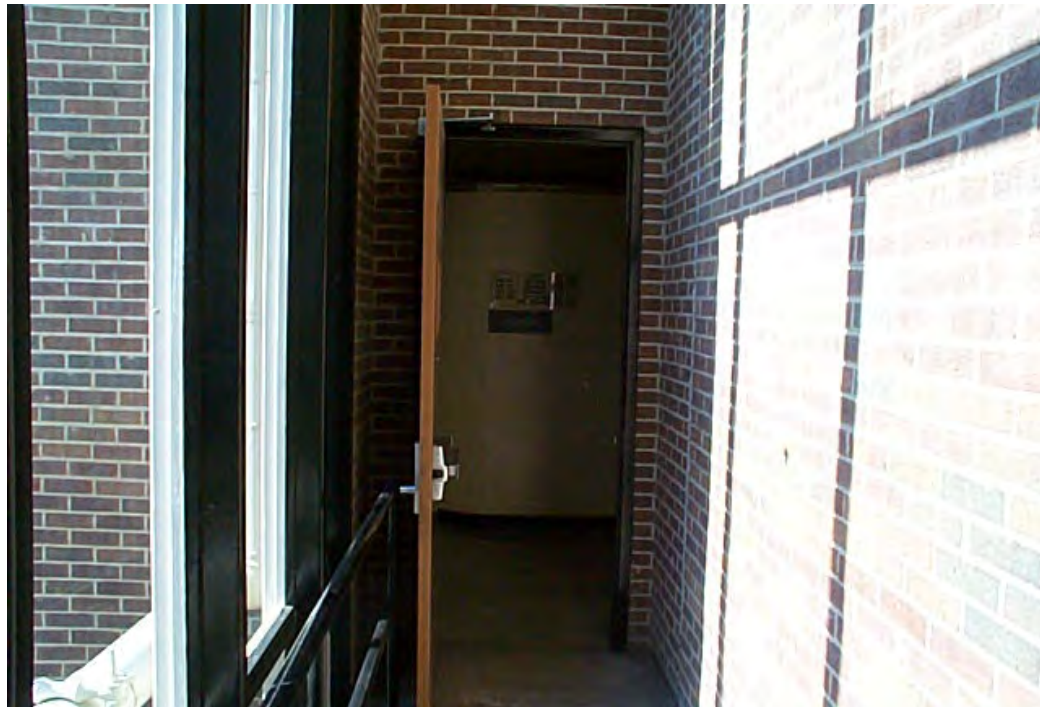
- **Written Program/Policy**
- **Chemical Inventory/MSDS's**
- **Inventory Control (students)**
- **Chemical Containers/Labeling**
- **Waste Disposal**
- **Eating, Drinking, and Smoking**



Beverage consumption in work area and use of beverage containers for chemical storage (Neither is allowed)



Food storage and consumption in the work area



Do not prop open fire doors with any object.

COMMON ISSUES

- **PPE Selection and Use.**
- **Attire.** (Closed toed shoes, loose fitting clothes, etc.)
- **Housekeeping.** (Clutter of flammable materials, chemical storage, hazardous waste storage, etc.)
- **New Operations.** (Must have all equipment and control measures)



Use of extension cords and fire hazard from hot iron in contact with cords.



Missing belt guard and damaged receptacle.

WHAT PERSONNEL NEED TO KNOW

- What is the Hazard Communication Plan and where is it located?
- What are SDS's and where are they?
- What should be done if there is a spill, fire or other emergency?
- Where is the emergency eye wash/safety shower and how is it used?
- What are PEL's and where are they?

WHAT PERSONNEL NEED TO KNOW

- How can a release be recognized?
- What are the health hazards associated with the materials used in your work area?
- What are signs and symptoms of exposure?
- What measures (work practices, emergency procedures, PPE, etc.) can be taken to protect yourself from the hazards associated with the materials you use?

HOW TO HAVE A SAFE ENVIRONMENT

- **INFORMATION** – Learn the hazards associated with your operation and share it with others. (faculty, staff, students)
- **TRAINING** – Ensure that all know how to work safely with hazardous materials and equipment.
- **LEADING BY EXAMPLE** – Model safe behavior.
- **ENFORCEMENT** – Clearly communicate expectations and do not tolerate improper or unsafe behavior.

Quiz and Contact Information

- ▶ Please complete the attached quiz to successfully meet all the requirements of this training.
- ▶ Click on the link and it should take you to the quiz. If you are not in slideshow mode, right click the link and click “Open hyperlink”.

Art Safety Quiz

For assistance contact EH&S at:

- ▶ 328-6166
- ▶ safety@ecu.edu
- ▶ 210 East Fourth Street