University of Southern Maine
Safety Training

Prepared By: University Environmental Health & Safety
ANNUAL BASIC SAFETY AWARENESS TRAINING IS REQUIRED FOR ALL USM EMPLOYEES AT THE TIME OF INITIAL ASSIGNMENT AND ANNUALLY THEREAFTER.

EMPLOYEE TYPES INCLUDE FACULTY, STAFF, GRADUATE STUDENTS, POST DOCS, AND STUDENT EMPLOYEES, INCLUDING WORK STUDY STUDENTS, TEACHING ASSISTANTS, RESIDENT DIRECTORS, AND ANY OTHER PERSON WHO RECEIVES PAY OR COMPENSATION FOR WORK PERFORMED.

A TEST, IS REQUIRED UPON COMPLETION BY THE EHS DEPARTMENT
Annual Basic Safety Training Goals

Upon successful completion of this course, you will be familiar with potential hazards present at the university, prevention of injury/illness, and general emergency protocols.

This training is designed as a general introduction.

Local or departmental training may also be necessary to further enhance hazard awareness, injury/illness prevention, and specific emergency protocols.
What Will Be Covered

- Personal Safety and Responsibilities Rights and Responsibilities
  - Emergency Action Plans - Emergencies Campus Alert System – Fire Extinguishers
  - Workplace Hazards - Accident Prevention Signs Physical Hazards Fall Hazards
  - Ergonomics Tool and Equipment Safety
- Personal Protective Equipment (PPE)
- Pollution Prevention
- Accidents, Injuries, and Reporting
- Workplace Violence
- Bloodborn Pathogens
- Fall Prevention
- Confined Spaces
- Asbestos Awareness and Control
- Lead Paint Awareness
- Hearing Conservation
- Electrical Safety Awareness - Energized Electrical Equipment - Hazardous Energy (Lockout/Tagout)
- Laser Safety
- Hazardous Materials Shipping and Receiving Universal Waste
### Rights and Responsibilities

<table>
<thead>
<tr>
<th>Rights</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>a safe workplace</td>
<td>work safely and report unsafe conditions to your supervisor</td>
</tr>
<tr>
<td>to stop work and contact your supervisor when unsafe conditions are</td>
<td>follow University policies and procedures</td>
</tr>
<tr>
<td>recognized</td>
<td>use appropriate safety equipment</td>
</tr>
<tr>
<td>an obligation not to perform tasks that are recognized or suspected to</td>
<td>participate in required training</td>
</tr>
<tr>
<td>be unsafe.</td>
<td>notify supervisor of accidents and near-misses and unsafe</td>
</tr>
<tr>
<td>information to protect you from hazards that cannot be eliminated</td>
<td>conditions</td>
</tr>
<tr>
<td>classroom or on-the-job training</td>
<td></td>
</tr>
<tr>
<td>medical treatment for workplace injuries or illnesses</td>
<td></td>
</tr>
<tr>
<td>access to your occupational exposure records</td>
<td></td>
</tr>
</tbody>
</table>

Every employee has rights and responsibilities for creating and maintaining a safe and healthy workplace.
Accidents, Injuries, and Reporting

Accidents and Near-Misses
An accident is an unplanned event, or sequence of events, that causes injury, illness, or property damage. Accidents may be investigated by your supervisor and/or your safety staff to determine how and why an accident occurred. The purpose of this investigation is fact-finding so that solutions can be developed to prevent a recurrence.
An event that does not cause injury or property damage is referred to as a “near-miss”. An event still occurred and you and your supervisor should collaborate to determine the cause. A near-miss is worthy of review as it indicates that something went wrong and it may have just been luck that prevented someone from being injured.

Injuries or Illness
All work-related injuries or illnesses--whether they require medical attention or not--are reported to Cannon Cochran Management Services, Inc. (CCMSI), the administrator of the university's Workers’ Compensation/employee injuries and illness claims. Injury reports must be submitted as soon as possible using their online injury/illness reporting system. For information regarding this service, contact your Human Resources (Employee Health and Benefits) Office.

Medical Attention
If you or someone else requires emergency medical attention, call your emergency number. Provide first-aid to the victim only if you are properly trained and have the appropriate PPE. If you encounter what you suspect to be blood or other bodily fluids, do not attempt to clean it up without proper training and PPE; keep others from doing the same. Promptly notify your supervisor of the incident and assist with the completion of any workplace injury report as requested.

Emergency Medical Attention: Contact your for emergency services to transport an employee to the hospital for medical treatment. Supervisors or other university employees should not transport injured employees in their personal vehicles.
Non-emergency Medical Attention: For injuries/illnesses that require non-emergency medical attention, contact your university’s health services to arrange an appointment. In general, your supervisor should make this call.
Workplace Violence

- The Occupational Safety and Health Administration (OSHA) defines workplace violence as any act or threat of physical violence, harassment, intimidation, or other threatening disruptive behavior that occurs at work. Homicide is the most extreme example of workplace violence and is a leading cause of job-related deaths.
- Alert your supervisor to any safety or security concerns and report all incidents of workplace violence immediately.
- For more information or assistance contact:
- The Employee Assistance Program will be provided by Cigna. The Cigna EAP provides free confidential assessment, counseling, referral, and consultation on work issues and personal problems for current or retired faculty, staff, and their family members. Visit the web site (CignaBehavioral.com) using your employee id: ums.
Emergency Action Plans

As part of emergency planning and preparedness, each campus has established systems to help everyone know what to do in an emergency.

- **Basic Evacuation Plan**
  - This is the basic employee evacuation plan for building emergencies. Your department should have an area-specific Emergency Action Plan (EAP detailing alarm systems, major hazards, shut down procedures, exit routes, rally points, and specific responsibilities. Contact your supervisor for a copy of your plan.

- **Evacuate**
  - Upon the sounding of the building alarm or detection of an emergency that requires evacuation.

- **Alert Others**
  - Verbally warn others in the area, activate the building alarm system, and dial 911 from a safe place.

- **Rally Point**
  - Go to your department designated Rally Point and stay there until released by your supervisor or emergency officials.
Emergency Actions Plans

- Each plan should include the following information:
  - procedure for reporting emergencies
  - hazards present
  - alarm systems
  - procedures for evacuation
  - evacuation routes
  - rally points
  - use of emergency equipment
  - staff authorized to remain behind*
Fire Extinguishers

- Only employees with hands-on training are allowed to handle fire extinguishers. If you have not received hands-on training **do not use** the extinguishers.
- Hands-on Fire Extinguisher Training is Required For:
  - Employees designated to use a fire extinguisher in their work area
  - Evacuation Coordinators
  - Employees working in remote areas (defined as not having ready access to a fire department)
  - Employees performing welding operations
- Don't Forget! If you have been trained to use a fire extinguisher, the hand's on training is only required once every three years - BUT, you must have fire extinguisher refresher training (available on-line) every year. Fire extinguisher refresher training link is located on the Safety Training web page.
- Specific campus Fire Prevention Plans:
  - University of Southern Maine (USM) Fire Prevention Plan

https://www.youtube.com/watch?v=g5xecnY9uOo&feature=player_embedded
For medical emergencies, the use of emergency services ensures treatment begins as early as possible. Avoid using a personal vehicle to get to a hospital.

- **Dial 911.** A complete guide to emergencies (phone numbers, information, and directory) is located in the front of the *USM* Campus phone directory.
- **Automatic External Defibrillators (AEDs) are available at various locations on the campus and in emergency services vehicles.**
- To receive emergency texts and email messages, register for the
  - [http://www.usm.maine.edu/usmalert/](http://www.usm.maine.edu/usmalert/)
There are many common hazards present at the university, as there are with any large and diverse working environments. Everyone has a role to assist in hazard reduction by recognizing hazards and making corrective actions. Ask your supervisor about specific hazards to your work or work area. Some general ways to eliminate hazards include:
Alert your supervisor immediately to any hazard you are unable to eliminate. One way to prevent accidents, injuries and illnesses is to identify and reduce hazards.
Accident Prevention Signs

- Accident prevention signs are used to warn or instruct employees that they may be exposed to a hazard, or that precaution may need to be taken to avoid a hazard. They are color-coded with one of three signal words at the top--Danger, Warning, or Caution.

- These signs also contain a message or pictograph that explains the specific hazardous condition or safety instruction the sign references.
Accident Prevention Tags

- Accident prevention tags are used as a temporary means of warning employees of an existing hazard, such as defective tools or unsafe equipment. Tags should be used until the hazard can be eliminated. Accident prevention tags are not to be used in place of, or as a substitute for, accident prevention signs.
Purpose: OSHA has determined that workers involved in a wide range of occupational jobs are exposed to a significant risk of death or injury from various objects in the workplace. Therefore, employers are expected to protect employees who could foreseeably be injured by workplace hazards.

For more information and your campus safety policies and procedures, visit:

The EHS Webpage
http://usm.maine.edu/safety/safety-programs
Every employee shall use protective gloves in the following situations:

- When working around human body fluids.
- When cleaning bathrooms, water fountains, etc.
- When cleaning sink traps.
- When handling recyclables.
- During rubbish or trash pickups.
- When handling extreme hot or cold temperatures.
- When working with chemical substances.
- When lifting or carrying heavy objects or any item that may have sharp edges.
Personal Protective Equipment - Eyes

- All employees shall wear eye protection in the following situations:
  - Working on stationary machines/equipment.
  - Working with power tools.
  - When working with chemicals.
  - When looking up while working (scraping ceilings, etc.)
  - When using toxic substances (mastics, acids, etc.)
  - When using compressed air.
  - When using grounds maintenance equipment.
  - When working with steam.
Personal Protective Equipment – Foot Protection

- Employees shall wear protective footwear at all times.
Purpose: To provide protection against the effects of noise exposure when employees experience work tasks at noise levels of 85 Db or more.
As a result of noise level findings, selection of hearing protectors will be made for all job tasks exceeding 85 Db (decibels). Hearing protectors will be selected on the attenuation (noise reduction rating) they provide.

- 85 db and under – no hearing protection required.
- 85-95 db – one type of hearing protection required (muffs or plugs).
- 96 db and above – two types of hearing protection required (muffs and plugs).
Bloodborne Pathogens

https://www.youtube.com/watch?v=gLeTN OVf8o&feature=player_embedded
Bloodborne Pathogens

- Do not clean up any blood or other potentially infectious material (OPIM) unless properly trained to do so.

- Any bodily fluid that cannot be positively identified shall be treated as potentially infectious.

- If you come across blood or OPIM notify your supervisor.

- If properly trained to handle blood or OPIM, proper PPE must be worn.
Responsibilities: Employees

- Comply with requirements of this program and their Department Exposure Control plan.
- Seek prompt first aid or medical attention for exposure incidents.
- Report exposure incidents to their supervisors/department heads.
Routes of Transmission

- **Skin puncture**
  - Needle-stick or sharp objects
  - Most common in health care workers

- **Broken or non-intact skin**
  - Rashes, hang nails, cuts, punctures, abrasions, acne, cold sores, sunburn

- **Contact with mucous membranes of eyes, nose, and mouth**
  - Spills, splashes, sprays of infectious materials
Personal Protective Equipment (PPE)

- Gloves
- Face mask, or face shield
- Goggles
- Lab coat or gown
- Head coverings
- CPR barrier devices
Proper Steps for Removing Gloves

1. Unfold the glove over the hand and pull off the glove.
2. Grip the wrist with a clean cloth to prevent direct skin contact.
3. Remove the glove from the cloth and discard in a designated container.
4. Repeat on the other hand.
5. Wash hands with soap and water.
6. Disinfect the hands and gloves using the designated method.
Personal Protective Equipment (PPE)

- General requirements for handling PPE that must be laundered, cleaned, repaired or replaced:
  
- Always inspect the condition of PPE before using.

- Remove PPE when damaged or contaminated and prior to leaving the work area; do not remove PPE from the workplace.

- Place damaged or contaminated PPE in a designated area or container for cleaning, laundering, repair or disposal.

- Departments must clean, launder, repair or replace PPE at no cost to the employee/student.
Sharps Containers

- Sharps such as syringes, hypodermic needles and broken glass must **not** be discarded in the trash.
- This ensures that anybody emptying the trash container, such as a custodian, is not injured by the sharp.
- **Sharps must be placed in a sharps container.**
Disposing of Waste

- Put all contaminated towels and waste in a sealed color-coded or labeled leak-proof container. Dispose of it as regulated waste.
Personal Hygiene and Facilities

- The following are prohibited in work areas where blood or OPIM may be present:
  - Storage of consumption of food and drink items.
  - Storage or use of cosmetics, contact lenses, or medications.
Personal Hygiene and Facilities

- **Hand washing** is also critical to reducing the spread of pathogens, therefore:
  - Employees/students are required to wash hands with soap and running water immediately after contact with blood or OPIM, and/or after removing gloves.
  - Hand washing facilities must be made accessible to employees/students.
  - If hand washing facilities are not accessible, hand cleaner may be used as a temporary measure.
Emergency Procedures

- If you get blood or OPIM on your skin or in your eyes:
  - Wash wounds and skin with soap and water for 15 minutes
  - Flush mucous membranes (eyes) with water

- Notify your supervisor of the incident and have an incident form filled out.

- Call University Environmental Health & Safety (5406)
Hazard Communication

• **Purpose**
  - To ensure that the hazard of all chemicals produced are evaluated and that the information is transmitted to employees.

• **Accomplished via:**
  - Container labeling
  - Safety Data Sheets (SDS)
  - Employee training

• [https://www.youtube.com/watch?v=SaL6gZokAss&feature=player_embedded](https://www.youtube.com/watch?v=SaL6gZokAss&feature=player_embedded)
Hazard Communication

- Label all chemicals:
- Have access to written material:
  - SDS
  - Chemical Hygiene Plan
  - USM Hazard Communication Program
- When handling chemicals, wear the appropriate PPE.
- Know emergency procedures in case of chemical exposure.
Chemicals will be classified using a harmonized system that provides standardized language for:

- Health Hazard Categories
- Physical Hazard Categories
- Environmental Hazard Categories*
## Health Hazards

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>1A 1B 1C 2</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>1 2A 2B</td>
</tr>
<tr>
<td>Respiratory or Skin Sensitization</td>
<td>1</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>1A 1B 2</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>1A 1B 2</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>1A 1B 2 Lactation</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity – Single Exposure</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity – Repeated Exposure</td>
<td>1 2</td>
</tr>
<tr>
<td>Aspiration</td>
<td>1</td>
</tr>
<tr>
<td>Simple Asphyxiants</td>
<td>Single Category</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>Hazard Category</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Explosives</td>
<td></td>
</tr>
<tr>
<td>Flammable Gases</td>
<td></td>
</tr>
<tr>
<td>Flammable Aerosols</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Gases</td>
<td></td>
</tr>
<tr>
<td>Gases under Pressure</td>
<td></td>
</tr>
<tr>
<td>Compressed gases</td>
<td></td>
</tr>
<tr>
<td>Liquefied gases</td>
<td></td>
</tr>
<tr>
<td>Refrigerated liquefied gases</td>
<td></td>
</tr>
<tr>
<td>Dissolved gases</td>
<td></td>
</tr>
<tr>
<td>Flammable Liquids</td>
<td></td>
</tr>
<tr>
<td>Flammable Solids</td>
<td></td>
</tr>
<tr>
<td>Self-Reactive Chemicals</td>
<td></td>
</tr>
<tr>
<td>Pyrophoric Liquids</td>
<td></td>
</tr>
<tr>
<td>Pyrophoric Solids</td>
<td></td>
</tr>
<tr>
<td>Pyrophoric Gases</td>
<td></td>
</tr>
<tr>
<td>Self-Heating Chemicals</td>
<td></td>
</tr>
<tr>
<td>Chemicals in which contact with water emit flammable gases</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Liquids</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Solids</td>
<td></td>
</tr>
<tr>
<td>Organic Peroxides</td>
<td></td>
</tr>
<tr>
<td>Corrosive to Metals</td>
<td></td>
</tr>
<tr>
<td>Combustible Dust</td>
<td></td>
</tr>
</tbody>
</table>
Safety Data Sheets (SDS)

- A document provided by the manufacturer that contains information on the potential hazards and how to work safely with the chemical product.

- Should be able to provide one to any inspector or person who asks.
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 7260
APPLICATION: FUEL TREATMENT
COMPANY IDENTIFICATION: Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1196

EMERGENCY TELEPHONE NUMBER(S): (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704/MHMIS RATING
HEALTH: 1/2 FLAMMABILITY: 2/2 INSTABILITY: 0/0 OTHER: 0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme *= Chronic Health Hazard

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

<table>
<thead>
<tr>
<th>Hazardous Substance(s)</th>
<th>CAS NO</th>
<th>% (W/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene Glycol Monoethyl Ether</td>
<td>112-34-5</td>
<td>1.0 - 5.0</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>1.0 - 5.0</td>
</tr>
<tr>
<td>Magnesium Nitrate</td>
<td>10377-60-3</td>
<td>30.0 - 60.0</td>
</tr>
<tr>
<td>Manganese Nitrate</td>
<td>10377-60-9</td>
<td>1.0 - 5.0</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**

WARNING
Combustible. Irritating to eyes and skin. Keep away from heat. Keep away from sources of ignition. No smoking. Keep container tightly closed. Do not get in eyes, on skin, or on clothing. Do not take internally. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Use a mild soap if available.

Wear suitable protective clothing and gloves. Wear chemical splash goggles.

Combustible Liquid; may form flammable mixtures at or above the flash point. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions. Strong oxidizer when water is removed. Combustibles may catch fire more easily after being wetted by product and dried. May intensify combustion of other materials. Oxidizer material is an oxidizer which may readily react with other materials particularly upon heating. Materials can initiate spontaneous combustion of paper, wood, cloth, and other organic materials. Ignition may be rapid, but can be delayed for several hours. Rapid oxygen evolution from decomposition may increase the intensity of a fire. Clothing may ignite on contact.
SAFETY DATA SHEET

PRODUCT
7260

EMERGENCY TELEPHONE NUMBER(S)
(800) 424-9300 (24 Hours) CHEMTREC

PRIMARY ROUTES OF EXPOSURE:
Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE:

EYE CONTACT:
Can cause moderate irritation.

SKIN CONTACT:
Can cause moderate irritation.

INGESTION:
Not a likely route of exposure. There may be irritation to the gastro-intestinal tract with nausea and vomiting.

INHALATION:
Not a likely route of exposure. Repeated or prolonged exposure may irritate the respiratory tract.

AGGRAVATION OF EXISTING CONDITIONS:
A review of available data does not identify any worsening of existing conditions.

HUMAN HEALTH HAZARDS - CHRONIC:
Large amounts of nitrates can cause dizziness, anemia and methemoglobinemia.

4. FIRST AID MEASURES

EYE CONTACT:
Immediately flush eye with water for at least 15 minutes while holding eyelids open. Get medical attention.

SKIN CONTACT:
Immediately flush with plenty of water for at least 15 minutes. Use a mild soap if available. Get medical attention.

INGESTION:
Get medical attention. Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink.

INHALATION:
Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN:
Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT:
167 °F / 75 °C (PMCC)
SAFETY DATA SHEET

PRODUCT
7260

EMERGENCY TELEPHONE NUMBER(S)
(800) 424-9300 (24 Hours) CHEMTREC

STORAGE CONDITIONS:
Store in suitable labeled containers. Store the containers tightly closed. Store separately from reducing agents. Store away from organic chemicals and other oxidizable materials, reducing agents, acids and alkalis. Store away from heat and sources of ignition. Use proper grounding procedures.

SUITABLE CONSTRUCTION MATERIAL:
Stainless steel, Polyvinylidene difluoride, PTFE, PVC. Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

UNSUITABLE CONSTRUCTION MATERIAL:
Cast iron, Polypropylene, Polyethylene, ABS plastics (Acrylonitrile Butadiene-Styrene resin)

6. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:
Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

<table>
<thead>
<tr>
<th>Substance(s)</th>
<th>Category</th>
<th>ppm</th>
<th>mg/m³</th>
<th>Non-Standard Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>OSHA 21/PEL</td>
<td>1,000</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH/STEEL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manganese Compounds (as Mn) as Mn</td>
<td>OSHA 21/ICEL</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manganese Fumes (as Mn) as Mn (Fume)</td>
<td>OSHA 21/ICEL</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ENGINEERING MEASURES:
General ventilation is recommended. Use local exhaust ventilation if necessary to control airborne mist and vapor.

RESPIRATORY PROTECTION:
Where concentrations in air may exceed the limits given in this section or when significant mists, vapors, aerosols, or dusts are generated, an approved air purifying respirator equipped with suitable filter cartridges is recommended. Consult the respirator / cartridge manufacturer data to verify the suitability of specific devices. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION:
When handling this product, the use of chemical gloves is recommended. The choice of work glove depends on work conditions and what chemicals are handled. Please contact the PPE manufacturer for advice on what type of glove material may be suitable. Gloves should be replaced immediately if signs of degradation are observed.

SKIN PROTECTION:
Wear standard protective clothing.

EYE PROTECTION:
Wear chemical splash goggles.
There are several new label elements:

- Symbols called “Pictograms”
- Signal Words
- Hazard Statements
- Precautionary Statements
- Product Identification
- Supplier/Manufacturer Identification
Labeling Hazardous Materials
For additional information and training, please visit the EHS web page

The Basic Parts of A GHS-Compliant Label

1. **n-Propyl Alcohol**
   - UN No. 1274
   - CAS No. 71-23-8

2. **DANGER**
   - Highly flammable liquid and vapor. Causes serious eye damage. May cause drowsiness and dizziness.
   - Fill Weight: 18.65 lbs. Lot Number: 856754434
   - Gross Weight: 20 lbs. Fall Date: 6/21/2013
   - Expiration Date: 6/21/2020

3. **Supplier Identification**
   - Acme Chemical Company • 711 Roadrunner St., Chicago, IL 60601 USA • www.acmechem.com • 132-444-5567

4. **Precautionary Statements**
   - See S.O.S. for further information.

5. **Pictograms**
   - Graphical symbols intended to convey specific hazard information visually.

6. **Hazard Symbols** (to be used in pictograms for substances of the particular class)
   - FLAME OVER CIRCLE—USED FOR THESE CLASSES:
     - Oxidizers
     - Flammable
   - FLAME—USED FOR THESE CLASSES:
     - Self-reactive
     - Pyrophoric
     - Self-heating
     - Emits Flammable gas
     - Organic Peroxides
   - EXPLODING BOMB—USED FOR THESE CLASSES:
     - Explosives
     - Self-reactive
     - Organic Peroxides
   - SKULL & CROSBONES—USED FOR THESE CLASSES:
     - Acute toxicity (severe)
   - CORROSION—USED FOR THESE CLASSES:
     - Corrosives
   - GAS CYLINDER—USED FOR THESE CLASSES:
     - Gases Under Pressure
   - HEALTH HAZARD—USED FOR THESE CLASSES:
     - Carcinogen
     - Respiratory Sensitizer
     - Reproductive Toxicity
     - Target Organ Toxicity
     - Mutagenicity
     - Aspiration Toxicity
   - ENVIRONMENTAL HAZARD—USED FOR THESE CLASSES:
     - Environmental Toxicity
   - EXCLAMATION MARK—USED FOR THESE CLASSES:
     - Irritant
     - Dermal Sensitizer
     - Acute toxicity (harmful)
     - Narcotic effects
     - Respiratory Tract Irritation

1. **Product Identifier**
   - Should match the product identifier on the Safety Data Sheet.

2. **Signal Word**
   - Either use “DANGER” (severe) or “Warning” (less severe)

3. **Hazard Statements**
   - A phrase assigned to a hazard class that describes the nature of the product’s hazards

4. **Precautionary Statements**
   - Describes recommended measures to minimize or prevent adverse effects resulting from exposure.

5. **Supplier Identification**
   - The name, address and telephone number of the manufacturer or supplier.

6. **Pictograms**
   - Graphical symbols intended to convey specific hazard information visually.
Labeling

- Manufacture label
  - Chemical name
  - Appropriate warnings.
  - Name and address of manufacturer.

- In-house label
  - Chemical name
  - Appropriate warnings
Labels: Pictograms – Health Hazards

Acute toxicity (Severe)

Acute toxicity (Less Severe):
- Irritant
- Dermal sensitizer
- Acute toxicity (harmful)
- Narcotic effects
- Respiratory tract irritation

Acute = short-term effect
Skin corrosion
Serious eye damage/
Eye irritation

Carcinogen
Respiratory sensitizer
Reproductive toxicity
Target organ toxicity
Mutageniciry
Aspiration Hazard
Labels: Pictograms – Physical Hazards

Explosives
Self reactives
Organic peroxides

Flammables
Self reactives
Pyrophorics
Self heating
Emits flammable gas
Organic peroxides
Corrosive to Metals

Gases under Pressure

Oxidizer
Labels: Signal Word

These are words used to indicate the severity of the hazard and alert employees to the potential hazard.

Only 2 signal words will appear:
- “DANGER” (more severe hazard)
- “WARNING” (less severe hazard)

Not all labels will have a signal word. Some chemicals are not hazardous enough to require that a signal word appear on the label.
Labels: Hazard Statement

There are specific hazard statements that must appear on the label based on the chemical hazard classification.

Examples:
- Flammable liquid and vapor
- Causes skin irritation
- May cause cancer
Labels: Secondary containers

- Must be consistent with the revised HazCom standard
- No conflicting hazard warnings or pictograms.
- May use written materials (e.g., signs, placards, etc.) in lieu of affixing labels to individual stationary process containers.
- Employer can use GHS compliant labels (same as shipping).

HMIS Label

NFPA Label

Must include notation of chronic health effects
Spill Response

- If a chemical spill occurs, contact your supervisor immediately.
- Do not attempt to clean a chemical spill yourself.
Hazardous Materials Shipping and Receiving

**Shipping**
- Training is required for all persons who ship hazardous materials.
- At University of Southern Maine, contact the [Environmental Health and Safety Office](mailto:EnvironmentalHealthAndSafetyOffice) at 780-5406.

**Receiving Guidelines**
- **Do not** sign for leaking packages, as a leaking package of hazardous materials may constitute an emergency.
- **Follow** package directions for handling.
- **Do not** drop or mishandle packages.
- Packages of hazardous materials **must be** immediately placed in a proper storage area. Do not leave packages in a hallway, office, or public area.
- The Department of Transportation uses diamond shaped signs on trucks, packages, and containers to indicate the presence of hazardous materials. If you receive a package with one of these labels, special precaution should be taken. Such packages should not be delivered to any public area, including classrooms or offices, but should be delivered directly to a hazardous materials storage area.
Pollution Prevention

- **Reduce**
  - Buy only what you need.
  - Use less toxic chemicals.
  - Improve processes to eliminate toxic chemicals and toxic waste.
- **Reuse**
  - Share chemicals with another department or colleague.
  - Use campus-wide “Reuse Program.”
  - Arrange for reuse before chemicals become outdated.
- **Recycle**
  - Paper and cardboard.
  - Metal and glass.
  - Toner and printer cartridges.
  - Rechargeable and lithium batteries.
  - Cathode Ray Tubes (computer monitors and TVs).
  - For more information about the campus recycling program please contact:
    - [USM Sustainability](#)
Fall Prevention

• **Purpose:** Fall prevention is a system aimed at eliminating injury potential for employees who work in situations where they could lose their balance and slip, trip, or fall from an elevated location.
Fall Prevention
Fall Hazards

If a fall of more than 4 ft. is possible, there must be some sort of protection against falling. Protection includes guardrails or railings, special equipment such as a harness and lanyard, training, or a combination of these devices.

Ladders and elevated work platforms such as scissor lifts, boom lifts, or scaffolding are used to perform tasks at heights that are otherwise unreachable.

Each employee must be trained to recognize the hazards of falling and to use the equipment provided properly. Do not use a ladder or other elevated work platform without first receiving specialized training.
Proper procedures while using ladders are as follows:

- Inspect the ladder for defects.
- Read instruction label.
- Position on a stable base, have someone hold the ladder when there is a question as to possible walk.
- Do not over extend in height.
- Secure top and bottom when possible or use spotter.
Fall Prevention

- Conduct ongoing equipment maintenance and inspections.
Proper procedures while using ladders are as follows:

- Any climbing over 20’ will require two people.

- Use the 4 to 1 principal (75º).

- Secure 36” over roof or walking.

- Always have both hands free, haul materials up and down with a rope line/mechanical device.

- Never over reach.
Fall Prevention – Ladder Safety

https://www.youtube.com/watch?v=HHCRmzsIQCY
Avoiding Back Injury

➢ To avoid injuring your back, always lift with your legs, not with your back.

![Proper lifting and carrying techniques](image)
Confined Spaces

Definition: A space that is...

- Large enough and so configured that an employee can bodily enter it and perform the assigned work.
- It must have limited or restricted means for entry or exit.
- It must not be designated for continuous occupancy.

Examples of Confined Spaces
There Are Two Types of Confined Spaces:

- **Non-Permit Required Confined Spaces** do not contain, or, with respect to atmospheric hazards, does not have the potential to contain any hazards capable of causing death or serious physical harm. Examples include attics, crawlspaces, etc.

- **Permit Required Confined Spaces** have one or more of the following characteristics:
  - Contains or has a known potential to contain a hazardous atmosphere.
  - May contain a material with the potential for engulfment of an entrant.
  - Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or a floor which slopes downward and tapers to a smaller cross-section, or
  - Contains any other recognized serious safety or health hazard (high voltage, steam, etc.).
Examples include Underground vaults, Tanks, Manholes, Pits, Pressure Vessels, and Pipelines.
Permit Required Confined Space Hazards:

- **Flammable/Explosive Atmosphere** (fuel, ignition, oxygen)
- **Oxygen Deficiency** (acceptable between 19.5% and 23%)
- **Toxic/Asphyxiant Gases** (i.e. hydrogen sulfide, CO, CO₂, ammonia, chlorine, nitrous oxide)
- **Engulfment/Entrapment** (shifting materials or water)
- **Heat/Burn**
- **Electrical**
What You Need to Know About Entering a Confined Space:

- Unless trained, authorized, and following USM’s Confined Space Program, do not enter a permit required confined space under any circumstance.
- If you’re unsure whether a space is a permit required confined space, stop and ask your supervisor.
Asbestos and Lead Paint Precautions

The following are general safety and health awareness guidelines when working near suspected asbestos and/or lead paint:

- Stop work immediately and contact your supervisor.
- Lead/asbestos suspicious surfaces shall be pre-tested before work begins.
- Always check with your supervisor if you have concerns.
Asbestos and Lead Precautions Continued

- Use appropriate personal protective equipment (eye protection, gloves, etc.).

- Report any potential exposure incidents to your supervisor immediately.
<table>
<thead>
<tr>
<th>Friable Material</th>
<th>Where Found</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos Cord</td>
<td>Electrical insulations and equipment</td>
<td>Electrical element insulation</td>
</tr>
<tr>
<td>Asbestos Tape, Strip &amp; Tubing</td>
<td>Electrical installations and pipe joints</td>
<td>Electrical conductor insulation, high temperature pipe joint insulation wrap</td>
</tr>
<tr>
<td>Fire resistant theater and welding curtains, protective clothing</td>
<td>Auditoriums, stages, metal shops, high temperature occupations</td>
<td>Fire and heat barrier</td>
</tr>
<tr>
<td>Spray Applied or Trowled-on Insulation</td>
<td>Steel I-beams and decks, concrete ceilings and walls, hot water tanks, pipe elbows, boiler casings</td>
<td>Thermal and acoustical insulation, decorative coverings</td>
</tr>
<tr>
<td>Preformed Thermal Insulation</td>
<td>Boilers, pipes, hot water tanks</td>
<td>Thermal insulation, condensation control</td>
</tr>
<tr>
<td>Artificial Snow</td>
<td>General commercial use</td>
<td>Decoration</td>
</tr>
<tr>
<td>Artificial Fireplace</td>
<td>General commercial use</td>
<td>Decoration</td>
</tr>
<tr>
<td>Corrugated Asbestos Paper</td>
<td>Hot water, steam pipes</td>
<td>Thermal insulation</td>
</tr>
</tbody>
</table>
Ergonomics

- Ergonomics is the science of improving the comfort of equipment and workspace in the workforce to decrease injuries and increase productivity.
- If your position involves any of the following ergonomic hazards, ask your supervisor about strategies for reducing or eliminating the risk:
  - Static postures  Repetitive motions  Forceful work  Awkward positions  Vibrations  Temperature extremes  Frequent lifting or twisting

**Computer Workstations**
- Maine law states that if you work on a computer for more than 4 hours a day, on most days, you must receive Computer Workstation training within the first month of your being hired and annually thereafter.
- **Computer workstation training is available** from the Environmental Health & Safety and Environmental web page.

https://www.youtube.com/watch?v=IOMPAACj9QA&feature=player_embedded
Tool and Equipment Safety

- **Basic Guidelines for Tools and Equipment**
- Hazards associated with the use of tools and equipment can be lessened by observing the following general guidelines:
  - Obtain the appropriate training before use
  - Select the proper tool for the job
  - Examine each tool or equipment before use
  - Ensure that guards, interlocks, and other devices are in place and functioning properly
  - Follow the manufacturer’s recommendations for proper use
Electrical Safety

- If working in damp locations, inspect electric cords and equipment to ensure that they are in good condition and free of defects, and use a ground-fault circuit interrupter (GFCI).
- Do not touch low hanging wires.
- Do not overload outlets.
- Report any missing, cracked or loose outlet covers.
Energized Electrical Equipment

• To work on energized systems or test, modify, repair, or install electrical equipment or systems, you must receive specialized training in electrical safety policies such as NFPA 70E: Standard for Electrical Safety in the Workplace.

• Some positions may not be directly involved with working on energized systems, but nonetheless have a higher than normal risk of electrical hazards. For example, painters may be exposed to a live circuit when removing an outlet cover to paint. If such exposure is a risk in your work, you must receive specialized training.
Electrical Safety

- Never use equipment with a frayed or damaged power cord. Electrical tape over a cord is not a repair.
- Never operate electrical equipment around water.
- Never repair electrical cords or equipment unless authorized and trained to do so.

https://www.youtube.com/watch?v=vhtQGQbuq6w&feature=player_embedded
Hazardous Energy (Lockout/Tagout)

- Energy sources in machines and equipment can be hazardous to workers. During the servicing and maintenance of machines and equipment, the unexpected start up or release of stored energy could cause injury to employees.
- There are several types of energy sources that must be locked out before you work on the equipment. These energy sources include:
  - Electrical (most common form)
  - Mechanical
  - Hydraulic or pneumatic
  - Fluids and gases
  - Chemical
  - Thermal
  - Gravity

- Lockout/Tagout is a system of locks and tags that are used to prevent energy from being inadvertently released while the equipment is being worked on. If you see equipment that has a lock and/or tag, do not use it. See the contact person listed on the tag for more information or contact:
  - Department of Facilities Management at (207) 780-5211.
Laser Safety

- Lasers produce highly focused, concentrated light that can injure the eyes and in some cases cause burns to skin. Similar to a magnifying glass focusing the light of the sun to burn paper, the lens of the eye can focus laser light onto the retina of the eye and damage the cells that sense color and lightness/darkness. This can cause vision loss and in some cases permanent loss of sight.
- **Never** intentionally look directly into a laser.
- **Do not** stare at the light from any laser.
- Allow yourself to blink if the light is too bright.
- **Never** direct a laser beam toward other people.
- If you will be using any laser other than a simple laser pointer you will need specialized training. These more powerful lasers normally will have a classification label of either “3b” or “4”.
Thank You

For questions or concerns please contact
University Environmental Health and Safety at
(207) 780-5406