SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT

"Facilities Excellence"

Hazardous Materials

AN EMPLOYEE'S RIGHT TO KNOW

OCTOBER 19, 2016

General Information

- Illness and Injury Prevention Plan
  - Required by Cal/OSHA and specifies procedures to maintain a safe work place
  - District's IIPP is located on the District's Sharepoint Site
  - Hazardous materials handling training is a requirement
- Hazard Communication Plan
  - District's HazCom Plan is located on the District's Sharepoint Site
- Hazardous Materials Business Plan
  - Filed annually with the San Mateo County Environmental Health Department
  - Small quantity generator

General Information

Roles and Responsibilities

Department Managers are responsible to

- Enforce safe work practices and mitigate hazards
- Ensure that employees are informed and trained
- Ensure that employees have the resources necessary to use and dispose of hazardous material as required in their jobs
- Maintaining employee training records

Employees are responsible to

- Follow safe work practices and procedures/use PPE
- Be informed about hazardous materials they work with
- Ask questions if they need more information
- Report accidents and/or unsafe conditions

General Information

- Employee Training on Hazardous Materials
- Each Employee must have:
  - General awareness/familiarization training about hazardous materials and their right to know about them
  - Function specific training on the chemicals they use

Resources

SMCCC District Office Safety Officer: José D. Nuñez, Vice Chancellor of Facilities Planning, Maintenance and Operations – (650) 358 6836

- **Cañada College**
  - Public Safety Office – (650) 306-3420
  - Chief of Public Safety – Brian Tupper (925) 337-3623
  - Facilities Manager – Karen Pinkham (650) 465-2712
- **College of San Mateo**
  - Public Safety Office – (650) 574-6415
  - Chief of Public Safety – Robert Dean (925) 337-3623
  - Facilities Manager – Michele Rudovsky (650) 255-7585
- **Skyline College**
  - Public Safety Office – (650) 738-4199
  - Chief of Public Safety – Jim Vangele (650) 740-1185
  - Facilities Manager – John Doctor (650) 642-4974

Resources

- SMCCCD Business Partners—Examples
  - Environmental Consultants
    - Denali Group
    - RGA Environmental
  - Hazardous Materials Removal, Recycling, Disposal
    - Performance Abatement Services
    - Ingenium
    - Recology
    - AERC
- Cal OSHA—http://www.dir.ca.gov/dosh/dosh1.html
- San Mateo County Department of Health—http://www.smchealth.org
- US Environmental Protection Agency—http://www.epa.gov

Hazardous Materials Presentation Agenda

- Hazardous Materials
- Hazardous Materials Identification
- Routes of Entry and Exposure
- Labeling and Marking Systems
- Protecting Yourself
- Spills and Leaks
- Notification and Response Actions
- Quiz!
- Questions & Answers

Close Encounters with Chemicals

- We encounter chemicals almost every day on each campus
  - Laboratories: Chemistry, Biology, Cosmetology, etc.
  - Custodial: Cleaning solutions
  - Engineering: Paints, sealants, solvents, etc.
  - Grounds Keeping: Pesticides, fertilizers, etc.
  - Using solvents or acids at work
  - Vehicle maintenance or repair
  - Filling campus vehicles with fuel
  - Swimming Pools: Sanitizers, water chemistry adjusters

Hazardous Materials at SMCCCD

- Hazardous Materials are a valuable and integral part of our activities at SMCCCD
- Many chemicals can cause injury or illness if not handled properly
- Following are some examples of hazardous materials, hazardous waste, and chemicals encountered on each campus

Small Laboratory Chemical Containers

Chemical Storage Cabinets

Laboratory Preparations

Custodial Services

Vehicle Fueling

Building Maintenance

Grounds keeping Chemicals

Labeled Ceramics Chemicals

Swimming Pool Chemicals

Hazardous Waste Materials

Hazardous Waste Materials

Oily & Waste Rags

Universal Waste Materials

Spent Fluorescent Tubes

Potential Housekeeping Issues

Laboratory Hazardous Wastes

Hazcom's 5 Major Elements

1. **Chemical Inventory** – a list of the hazardous chemicals in the workplace
2. **Safety Data Sheets (SDS)*** – must be available for each hazardous chemical that you work with .
3. **Labeling** – labels must be affixed to each chemical container in the workplace. Labels must identify container contents and warn the user of any hazards that may exist while using the chemical
4. **Training** – employers must inform their employees of the hazards of chemicals in the workplace and train them how to safely use them
5. **Written program** – there must be a written hazardous communication plan, program or policy, in the workplace
6. * **SDS formerly called MSDS-Material Safety Data Sheets**

Hazard Communication Standard

- Label must include the following information:
  - The NAMES of the chemical. If a product contains more than one ingredient, all must be listed.
  - A WARNING of the hazards associated with the product. The warning may also be indicated in the form of a symbol or sign.
  - The NAME and ADDRESS of the manufacturer or distributor.

Hazard Communication Standard (cont.)

- Physical Hazards
  - **Flammable Liquids** – have a flash point below 100° F which means that at or below 100° the material gives off enough vapor to catch fire if an ignition source is present.
  - **Combustible Liquids** – have a flash point above 100° F. These materials must be heated to above 100° F before enough vapor is emitted to ignite
  - **Pyrophoric** – materials can ignite without an ignition source at temperatures below 130° F.

Chemical Hazards

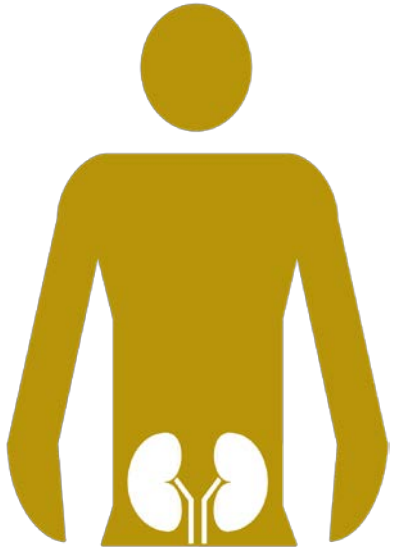
- **Reactives**
  - Some chemicals are hazardous due to their ability to rapidly release large amounts of energy
  - May become dangerous when mixed with water, air or other chemicals. Water reactives release a gas that is either flammable or toxic
- **Explosives**
  - Materials can suddenly, almost instantaneously, release pressure, gas and heat when subjected to shock, pressure or high temperatures

Health Hazards – Routes of Entry

- A chemical is a health hazard if exposure can cause illness or health problems. For example, chemicals can be hazardous to:
  - Your lungs: if you breath fumes, mists or dusts
  - Your skin: if liquid or dust touches or spills on you or splashes on your skin or eyes
  - Your mouth: if you eat after handling chemicals
  - Other bodily functions: accidental swallowing

Other Potential Health Effects

- Some chemicals affect specific organs such as your kidneys, liver, reproductive or nervous system.



Chemical Exposures

- **Dosage** – the quantity of chemical entering the body
- **Acute Effects** – happen within a short period of time
  - Contact with skin
  - Breathing vapors
  - Temporary dizziness or headaches
- **Chronic Effects** – can take a relatively long time to occur or an extended period of time
  - Asbestosis
  - Lung Cancer

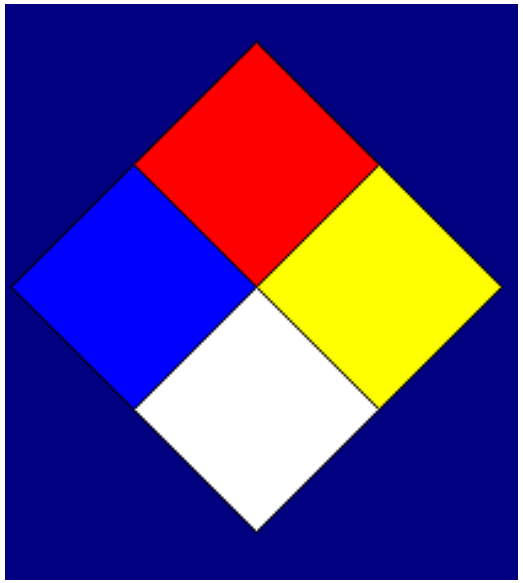
Labeling and Marking Systems

- National Fire Protection Association (NFPA) Diamonds
- Hazardous Materials Identification System (HMIS) Labels
- Uniform Laboratory Hazard Signage System
- Global Harmonized System of Labeling

Labeling and Marking Systems

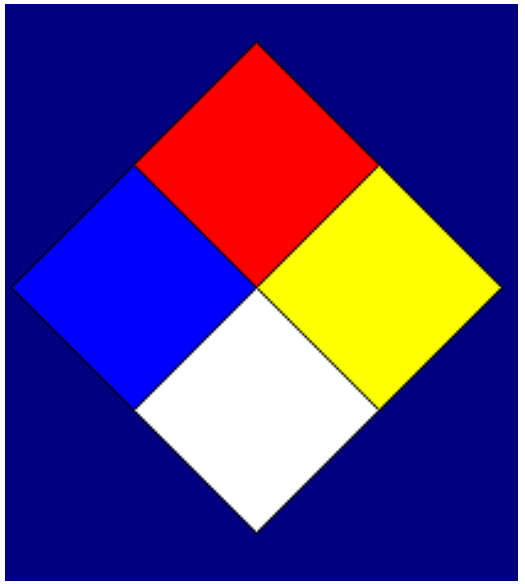
Labeling and marking systems

- Provide at a glance hazard information
- Include color codes and a numerical rating system
- Are located near main entrance, on fire alarm panel, or exterior doors



NFPA Diamonds

- Blue = Health
- Red = Flammability
- Yellow = Instability
- White = Special Hazard Information

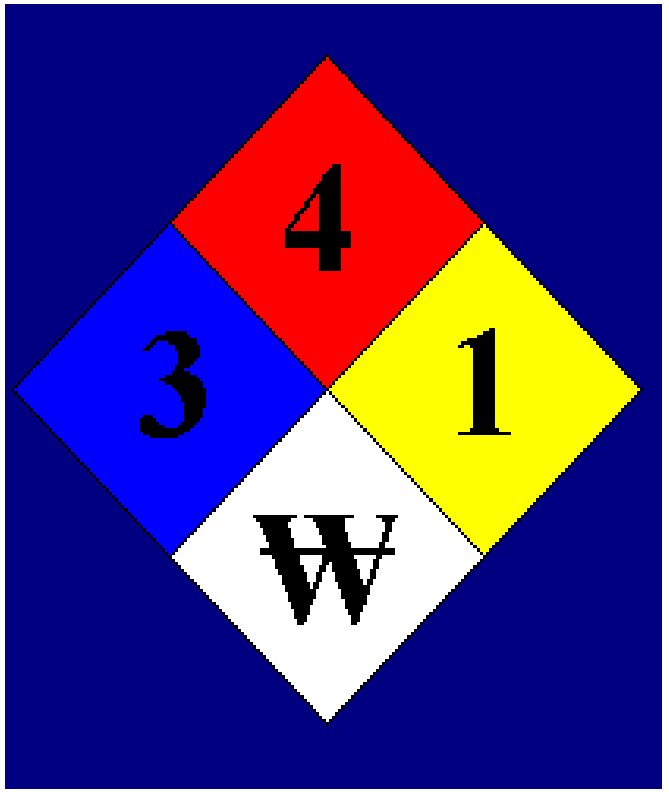


NFPA Diamonds

NFPA Diamonds rate hazards as follows:

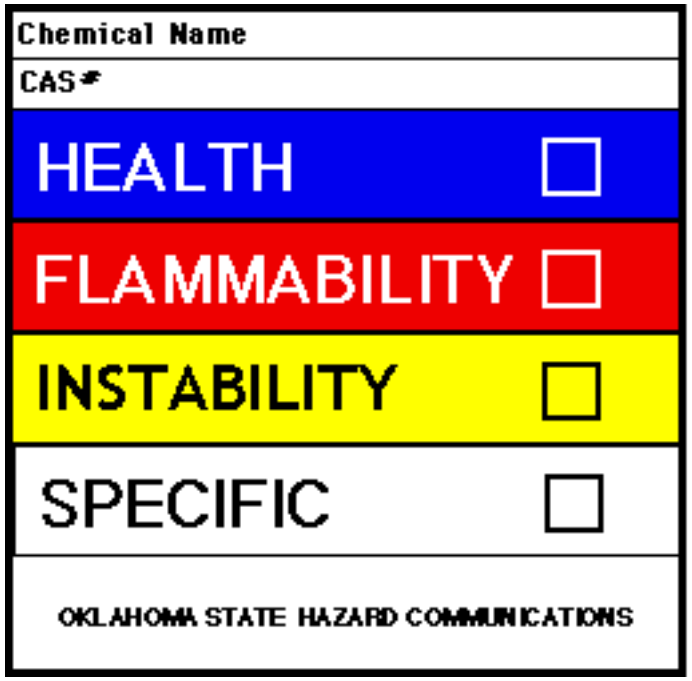
- 4 = Deadly Hazard
- 3 = Severe Hazard
- 2 = Moderate Hazard
- 1 = Slight Hazard
- 0 = No Hazard

NFPA 170 is the current standard for NFPA diamond labelling in the United States. However, it is important to note that the standard in the USA will align with the GHS standards in the near future. The GHS standard for labelling will reverse the hazard numbering system such that 4 will become the least hazardous.



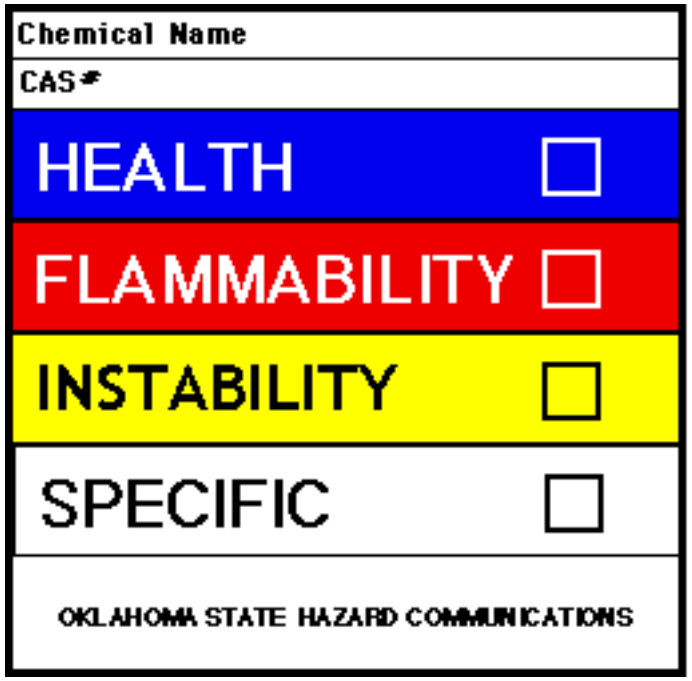
HMIS Labels

- Designed to go on individual containers of products that don't have the manufacturer's labels on them
- Same color code/numerical rating system as the NFPA diamonds



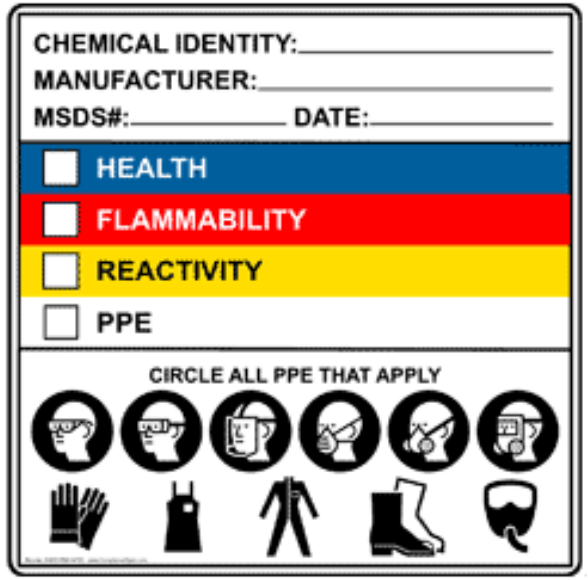
HMIS Labels

- Blue = Health
- Red = Flammability
- Yellow = Instability
- White = Personal Protective Equipment (PPE) or special protection information
- Numerical Rating 0-4



Other Label Warnings

- The identity of the chemical
- Name, address, and emergency phone # of the manufacturer
- Physical and health hazards
- Special handling instructions
- Basic PPE
- First Aid, Fire Response and Spill cleanup

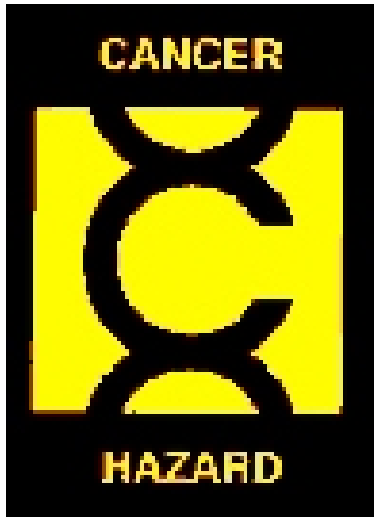


Labeling and Marking Systems

- YOU SHOULD NEVER HAVE ANY UNATTENDED, UNLABELED CONTAINERS IN YOUR WORKPLACE!

Labeling and Marking Systems

- Located on laboratory and chemical storage doors
- Pictographs depict worst hazards present in lab or area



Labeling and Marking Systems

- Always check with the appropriate college personnel (lab manager or chemical hygiene officer) before performing work or maintenance in a laboratory!

Protecting Yourself

- Substitute less toxic materials whenever possible
- Use ventilation whenever possible
- Use necessary PPE
- Carefully read and label each container
- Limit volume of volatile or flammable materials
- Provide means of containing the material in the event of spill
- Obtain and read specific SDS

Personal Protective Equipment (PPE)

- **Gloves** – protect your hands
- **Goggles** – protect your eyes when risk of splash
- **Face Shields** – wear when working with corrosive materials
- **Splash Aprons** – protect your body, especially when pouring from one container to another
- **Respirators** – should be worn when there is significant exposure to fumes, dusts, or mists

PPE used by First Responders

- Appropriate respiratory protection
- Glasses, goggles, and face shields
- Hearing protection
- Gloves
- Foot protection
- Head protection
- Aprons or full body suits

Hazard Communication Summary

- Review the written Hazardous Communication Plan
- Know what chemicals you are working with
- Know where the SDS are located and how to use them
- Ask your supervisor if you have questions
- Only trained employees may use chemicals

Hazardous Materials First Aid

- Eyes: Flush with water for 15 minutes
- Skin: Wash with soap and water
- Inhalation: Move to fresh air
- Swallowing: Get Emergency Medical Assistance
- Report accidents and exposures to your supervisor

Spills and Leaks

- Evacuate the area
- Notify a Supervisor
- Call Public Safety or Facilities
- Remove ignition sources (if safe to do so)
- Stay away

Spills and Leaks

- What can happen when there is a spill or leak?
- A little acid spill?
- Unlabeled containers?
- What could go wrong?

Spill and Leak Dangers

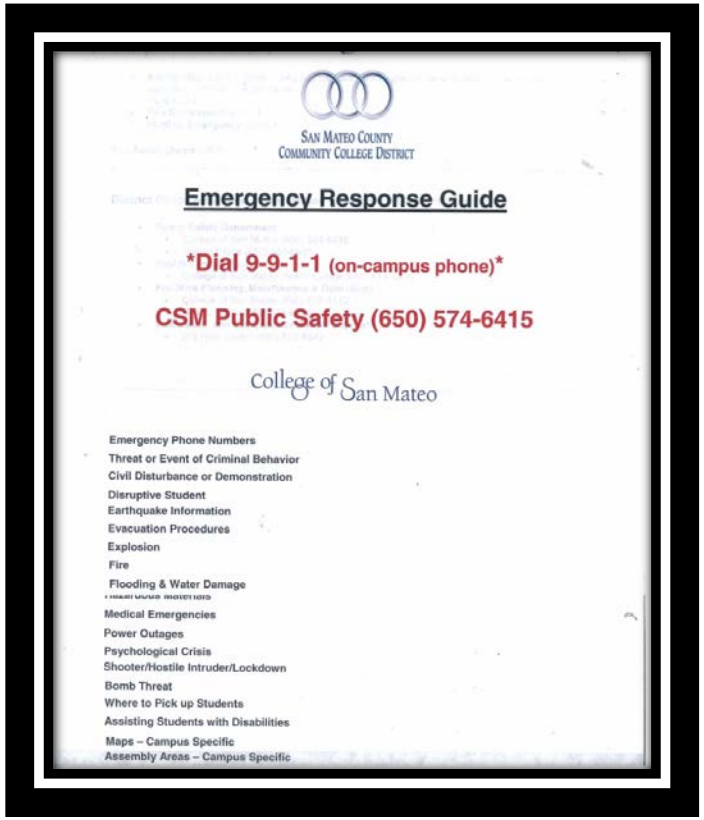
- Where did the spill go?
- What damage has been done?
- Damage concrete and possible discharge to storm drain.

Spills and Leaks Happen

- Did this spill require notification?
- YES!
- Why?
- The chemical can flow to a storm drain or come into contact with people

Campus Emergency Response Plan

- Review the Campus Emergency Response Plan
- Hazardous Materials Section
- Read it ahead of time! Keep it handy!



Who to Contact

- Campus Emergency Contacts
  - **Cañada College**
    - Public Safety – (650) 306-3420
    - Chief of Public Safety – Brian Tupper (650) 306-3445
    - Facilities Manager – Karen Pinkham (650) 306-3325
  - **College of San Mateo**
    - Public Safety – (650) 574-6415
    - Chief of Public Safety – Rob Dean (650) 574-6200
    - Facilities Manager – Michele Rudovsky (650) 574-6577
  - **Skyline College**
    - Public Safety – (650) 738-4199
    - Chief of Public Safety – Jim Vangele (650) 738-4455
    - Facilities Manager – John Doctor (650) 738-4166

Hazard Materials Summary

- What have we covered?
  - Read labels and SDS
  - Follow warnings and instructions
  - Use of PPE
  - Practice sensible, safe work habits
  - Recognize spills and leaks
  - Notify Public Safety or Facilities

Quiz

1. Chemical manufacturer's must label containers and provide _____.
2. Employers should keep MSDS/SDS in a locked file cabinet. *True or False*
3. Dizziness, nausea, rashes, and respiratory irritation are signs of _____ exposure.
4. List three routes by which a chemical can enter the body.
5. Household chemicals are never as hazardous as chemicals used at work. *True or False*
6. On NFPA labels, a 4 in the red diamond indicates an extreme health hazard. *True or False*
7. First Aid for chemicals splashed in eyes includes _____.
8. You will only know the health hazards and PPE requirements if you _____.
9. A _____ can be used to protect against breathing hazardous vapors or gases.
10. If you see a chemical spill, you should clean it immediately. *True or False*

Answers

1. MSDS/SDS must be provided by the manufacturer.
2. False. MSDS/SDS must always be accessible to employees.
3. These are all symptoms of acute effects, or short term exposure.
4. The primary routes chemicals enter the body are skin, eye, inhalation and swallowing.
5. False. Many household chemicals are more hazardous than chemicals found at work.
6. False. The red diamond indicates flammability hazards, not health hazards.
7. Flushing the eye for 15 minutes is the typical first aid for chemicals splashed in the eyes.
8. You must read the labels and MSDS/SDS to learn how to protect yourself from the hazards of a chemical.
9. Respirators protect against breathing hazardous vapors and gases.
10. False. Only attempt to clean a chemical spill if you've been properly trained.

Question & Answer