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Hazard Communication
How To Reduce Your Company's Business Liability

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For:
Governor's Occupational Safety & Health Conference 2009
Developed by
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Intended Audience

This class is for business owners, managers and supervisors, safety committee members or employees who work with or around chemicals.

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Our Radio Station

What's In It For Me

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Hazard communication affects a company's bottom line

- An effective hazard communication program helps avoid injury and illness to workplace employees.
- A written program with all of the components in place wards off evil OR OSHA fines.
- Reducing injury and illness among your employees is like taking money to the bank.

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Reducing injury and illness among your employees is like taking money to the bank.

Reduced number and cost / frequency and severity of claims result in:

Reduced workers compensation experience modification → **More favorable rating tier from your insurance company**

Reduced cost of doing business = **Greater profit / more competitive bids**

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The Numbers

Payroll	Experience Modification	Tier	Tier Rate	Workers Compensation Cost Per Hundred	Workers Compensation Cost To Company X	
$ 500,000	1.5	ARP	1.64	0.06	$ 73,800	**266%**
$ 500,000	1	Moderate	1.15	0.06	$ 34,500	**124%**
$ 500,000	0.88	Exceptional	1.05	0.06	$ 27,720	**100%**

Program Goals:

By the end of this program you will be able to:

- **Answer what the hazard communication program needs to contain.**
- **Know how to identify hazardous chemicals in your workplace and know how to find out how they may affect your body.**
- **Learn to protect workers and discuss what may happen if you fail to effectively protect them.**
- **Produce a hazard communication policy and program for your company.**

Hazard Communication Program Elements

- Written company hazard communication program or policy.
- Employee Information and Training
- Labeling
- Material Safety Data Sheets (MSDS)

Employee Information and Training

- If you are starting out:
  - After you identify your chemical hazards you have three steps to go through before you begin training.
    - Elimination or substitution.
    - Administratively reducing the risk through training, policy or practice.
    - Determining what personal protective equipment is indicated to protect against your exposure

Step 1
Elimination or Substitution

- Engineer the problem away.
- Eliminate the hazardous substance altogether.
- Redirect the vapors or fumes from the process away from people local exhaust systems, for example.
- Reduce the amount used in the process.
- Substitute a different, less hazardous substance, that accomplishes the same task.

Step 2
Administratively Reduce The Hazard

- Develop policies that address delivery, storage locations and quantities.
- Codify the amount of the product that is appropriate to the job, and ensure that is the amount present for use.
- Train employees in the proper application or use of your company's chemicals to ensure minimal exposure.

Step 3
Physically Protect Employees From Present Hazards

- Employers must evaluate the hazards they have present at their workplace.
- Determine an appropriate method of protecting employees from the hazards.
- Provide the selected personal protective equipment, (PPE).
- Train employees in proper use.
- Require / enforce proper use at the workplace.

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Questions
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So Which Chemicals

- **Are present in YOUR workplace**

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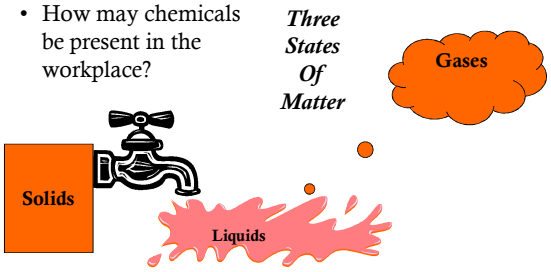
Identify hazardous chemicals in your workplace and know how to find out how they may affect your body.

- How may chemicals be present in the workplace?

Three States Of Matter



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Solids

- Solids typically are hazardous when they are absorbed or ingested into the body.
- A lead weight may not be hazardous, but handling it with bare hands, then eating without washing may introduce the lead into your system.
- Solid particles may be inhaled; they include asbestos, fumes, (which are airborne metal particulate) and bacteria or dusts.

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Particles

- Particulate matter may be small solid particles like mold spores or welding fumes.
- It may also be small liquid particles that have become airborne through a pressurization technique such as an aerosol can or a pressure washer.

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Liquids

Liquid Hazards

- Liquid particulate may be inhaled and affect the mucus passages in your mouth and nose as well as your lung tissue.
- Liquid drops may get on your skin and be absorbed or ingested.
- Some liquids are in the process of releasing gases into the atmosphere at room temperature.

Gases

- Gases are matter that is in its gaseous state at normal temperatures.
- Gases can be hazardous without being poisonous. Methane, and nitrogen are simple asphyxiant gases which displace oxygen, and can kill people in confined spaces.

Gases

- Poisonous gases may be asphyxiant in nature also, such as carbon monoxide, which inhibits your ability to take up the available oxygen in the air.
- Poisonous gases ironically may range from temporarily disabling to lethal. Two examples of this are pepper spray and chlorine. When chlorine is inhaled in heavy enough concentrations it reacts with the moisture in your lungs to form hydrochloric acid.

Routes of Negative Contact

- Your largest organ is…. **SKIN**
- The greatest danger is penetration of the blood stream. **Hydrofluoric acid, damages nerves, may cause cardiac arrest**
- Another danger is damage to the skin or nerve endings.

Routes of Negative Contact

- President Clinton didn't INHALE
- Particulate matter larger than 5 microns may be expelled from the lungs.
- Particulate matter less than 3 microns may enter the alveolar sacs in your lungs.
- Human hair ranges from **17 to 181** microns in thickness.
- Asbestos may be invisible to your eye and be as small as **1 Micron thick and 3 Long**.

Routes of Negative Contact

- You can ingest hazardous chemicals through transfer.
- If so, two things may happen:
  - One: your system will either neutralize it through dilution or reaction with the chemicals in your system and you will eliminate it over time.
  - Two: you will absorb it into your blood stream.
- Example: hospitals monitor how much Tylenol you have because too much can cause liver damage.

Hazard Quiz

How does welding present a hazard?

a. Noxious fumes
b. Noxious gases
c. Ingested solids

Hazard Quiz

How may cleaning supplies pose a hazard?

a. Noxious vapors
b. Noxious gases
c. Absorbed into the skin

Watch out for mixed chemical reactions such as chlorine and ammonia

Hazard Quiz

How may petroleum products pose a hazard?

a. Noxious vapors
b. Noxious gases
c. Absorbed into the skin
d. Highly flammable

Labeling Requirements
What is a label supposed to tell you?

- Must ID the chemical.
- Must provide appropriate hazard warning.
- Must provide the manufacturer's name and address
- Must specifically tells you how you might be endangered.
  - Warning, Skin and Eye Irritant
  - Danger, may be fatal if swallowed, harmful if inhaled. Causes moderate eye irritation.

Labeling

- All store bought product containers come with labels.
- The label provides basic information covering the hazards of the chemicals in the container.

Labeling

- All containers employees use to work with hazardous material must:
  - Either be labeled
  - or be temporary for portability and be used only by the person who transfers from the primary labeled container into the non labeled container in the same time period of use.

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Primary containers have a label provided by the manufacturer of the chemical

- The label identifies the chemicals present.
- It provides warnings concerning the type of hazard the chemical presents. This includes physical or health hazards and identifies target organs.
- It provides the manufacturer's name and address.

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Secondary containers must have labeling that provides the basic information to employees

- The label must identify the chemical.
- It must provide the appropriate warning that describes how the chemical is a hazard; i.e., skin, eyes, vapors in lungs, etc.
- This is the responsibility of the employer

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What is MSDS?

- Material Safety Data Sheets (MSDS) provide the information about a specific substance that employees may come into contact with in the course of their work.

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MSDS Information

Section 1. Product and Company Description

This section links the chemical name on the label to the MSDS. The MSDS also lists the name, address and the phone number of the company, manufacturer or distributor who provides the chemical.

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MSDS Information

Section 2: Composition, Information or Ingredients

This section must identify all the hazardous ingredients of the material. This section may also include OSHA Permissible Exposure Limits (PELs) and ACGIH (American Conference of Governmental Industrial Hygienists) Threshold Limit Values (TLVs).

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MSDS Information

Section 3: Hazard Identification

This section discusses the health effects one may encounter when exposed to the material. The section will describe the appearance of the material, the potential health effects and symptoms associated with exposure, routes of entry, target organs that could be affected, and so on.

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MSDS Information

Section 4: First Aid Measures

This section will describe possible first aid procedures for each route of entry. The procedures will be written so that untrained individuals can understand the information.

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MSDS Information

Section 5: Fire-Fighting Measures

This section will describe information on the fire and explosive properties of the material, extinguishing items, and general fire-fighting instructions.

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MSDS Information

Section 6: Accidental Release Measures

This section gives information on how to respond when a material spills, leaks or is released into the air. This information may include how to contain a spill or the types of equipment that may be needed for protection.

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MSDS Information

Section 7: Handling and Storage

This section discusses information on handling and storage of the material. Topics that could be described are: general warnings to prevent overexposure, handling procedures, and hygiene instructions to prevent continued exposure.

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MSDS Information

Section 8: Exposure Controls and Personal Protection

This section discusses engineering controls and personal protective equipment that would help reduce exposure to the material. The necessary personal protective equipment should be provided for eye/face protection, skin protection and respiratory protection.

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MSDS Information

Section 9: Physical and Chemical Properties

This section will include information about the physical and chemical properties of the material. The following characteristics should be detailed: appearance, odor, physical state, pH, vapor pressure, vapor density, boiling point, freezing/melting point, solubility in water and specific gravity or density. Indicate if these characteristics do not apply to your material.

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MSDS Information

Section 10: Stability and Reactivity

This section requires that potentially hazardous chemical reactions be identified. It addresses chemical stability, conditions to avoid, incompatibility with other materials, hazardous decomposition and hazardous polymerization.

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MSDS Information

Section 11: Toxicological Information

This section discusses data used to determine the hazards that are given in Section 3, "Hazard Identification." The following information can be addressed: acute data, carcinogenicity, reproductive effects, target organ effects, etc.

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MSDS Information

Section 12: Ecological Information

This section will help determine the environmental impact should the material ever be released into the environment.

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MSDS Information

Section 13: Disposal Considerations

This section gives important information that may be helpful in the proper disposal of the material. The information can cover disposal, recycling and reclamation.

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MSDS Information

Section 14: Transport Information

This section is designed to give basic shipping information. The basic shipping information could include: the hazardous materials description, hazard class and the identification number (UN or NA numbers).

MSDS Information

Section 15: Regulatory Information

This section discusses information on the regulations under which the material falls. Examples of a few regulatory agencies are: OSHA, TSCA (Toxic Substance Control Act), CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act), SARA Title III (Superfund Amendments and Reauthorization Act).

MSDS Information

Section 16: Other Information

This section should include any other important information concerning the material. This information can include: hazard ratings, preparation and revisions of the MSDS, and label information.

MSDS Information

This is a general overview of the ANSI Z400.1-1993 standard. The standard is intended to help develop consistent, understandable MSDSs that will provide useful information to a cross-section of education levels, from the average person to the chemist. The MSDS sections were prioritized according to the usefulness of the information.

If you wish to obtain a copy of this standard, please contact:

American National Standards Institute
11 West 42nd Street
New York, NY 10036

Material Safety Data Sheets (MSDS)

- MSDS should be kept in two types of locations
  - The company office should have the master binder which has all MSDS that the company needs.
  - MSDS is required to be readily available to employees in the work area.

Material Safety Data Sheets (MSDS)

- Many companies use their employee break room as a place to keep the MSDS binder. That way everyone knows where to find it.
- Mobile / variable job sites, like construction are better served by ensuring each crew boss has a copy of the binder in his / her truck.

MSDS Binder Table of Contents

- Your company should develop a list of hazardous chemicals it uses or is exposed to and provide MSDS for each of those.
- That list can be used as a table of contents

MSDS Information

- Who is MSDS Information intended for?
  - Employees who may be exposed to the substance while at work.
  - Employers who need to know how to store it, and how to protect employees from it.
  - Emergency room doctors and paramedics who need to know what the patient was exposed to.

Written company hazard communication program or policy.

Company Policy Statement

The management staff of GCRS , Inc. is committed to the prevention of incidence or happenings which result in injury and/or illnesses; and to comply with all applicable federal and state health and safety rules. Therefore we will spare no effort … … written hazard communication program share assigned responsibility to ensure performance under that responsibility.

In order to comply with OAR 437, Division 2/Z (CFR 29 1910.1200, Hazard Communication), the following written Hazard Communication Program has been established for GCRS , Inc.

Written company hazard communication program or policy.

Procedures

- Covering container labeling
- Working with chemicals
- Requirements for MSDS to be available
- Requirements for training and for proper use of PPE

- Note: The procedures help management maintain the company standard as well as provide information to the employees.

Written company hazard communication program or policy.

Hazardous Chemical List

The hazardous chemical list ought to look a lot like your table of contents for the MSDS books at your company.

The recommended technique is to identify the following:

Name Work Process Work Location

Written company hazard communication program or policy.

Hazardous Chemical List

Name Work Process Work Location

The name is required, the work process or location is identified to help you ensure you don't miss an area or operation when setting up and implementing your program.

Written company hazard communication program or policy.

Hazardous Non Routine Tasks

The task is **identified** in your written program, together with **where** it is carried out, **who** is the trainer for it, and **what** chemicals are used in conducting the task. *This allows your company to ensure you provide appropriate training for the task.*

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Written company hazard communication program or policy.

Providing information to employees who are on your job site, but aren't your employees. (Contractors)

Your company has the responsibility to inform contractors what hazards they may be exposed to and provide them with working copies of the MSDS as appropriate.

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Generic Company R S INC.

- I am providing you an example of a hazard communication plan.
- It is 4 pages long because it is generic.
- It has a good format to start from. Of course, your requirements in your company will be specific and most likely more robust, but again this provides a way to address this need.

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Questions?

Thank you for your time