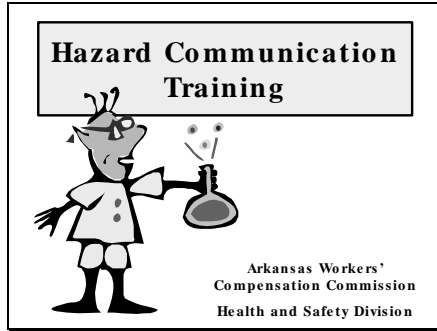
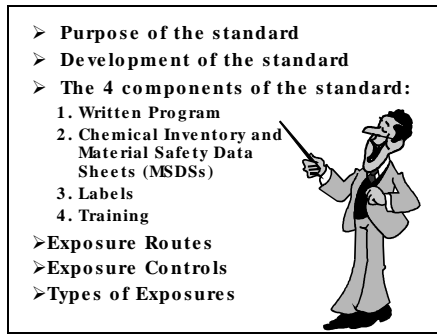


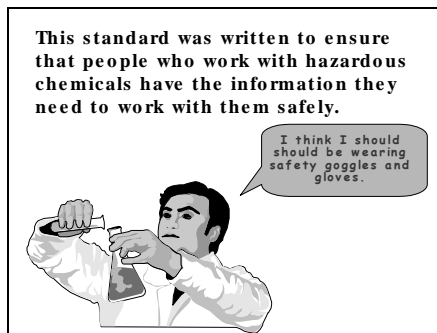
Slide 1



Slide 2



Slide 3



Slide 4

The Hazard Communication (HazCom) Standard, also known as the “Right to Know” Standard, was developed by the Occupational Safety and Health Administration (OSHA).



Slide 5

There are 4 components to the Hazard Communication Standard:

- 1. Written Hazard Communication Program**
- 2. Chemical Inventory and Material Safety Data Sheets (MSDSs)**
- 3. Labeling**
- 4. Training**

Slide 6

1. Written Hazard Communication Program

➤ **The written program should describe how the other requirements of the standard will be implemented and maintained.**

Slide 7

2. Chemical Inventory and Material Safety Data Sheets (MSDSs)

- **Maintaining an up-to-date chemical inventory and the corresponding Material Safety Data Sheets (MSDSs) for all hazardous chemicals.**



Slide 8

What is a MSDS?

- **A Material Safety Data Sheet, or MSDS, is an information sheet which tells you all you need to know to work with a chemical safely.**



Slide 9

What information does an MSDS give you?


- **Name of Chemical**
- **Manufacturer**
- **Chemical Components**
- **Hazards Associated with the Product**
- **Physical/ Chemical Characteristics**



Slide 10

And there's more!
They also provide you with:

- **Reactivity Data**
- **Safe Handling & Use**
- **Control Measures (PPE)**
- **Spill and Leak Handling**
- **First Aid/Emergency Response**
- **Disposal Practices**



Slide 11

Employers must ensure that MSDSs and inventories are immediately available to employees, and that they are updated when necessary.



Slide 12

At most companies, MSDSs can be found in the following locations:

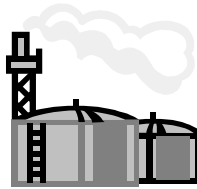
- **Within each department**
- **In the Safety Office**



Slide 13

Who supplies MSDSs to product users?

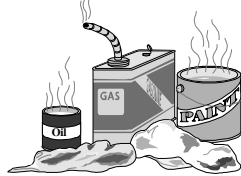
All manufacturers of hazardous chemicals are required to provide one of these sheets for all products they sell.



Slide 14

3. Labeling

✓ Labeling of all hazardous chemicals in the proper manner



Slide 15

All labels must contain the following information:

- Name of the product
- Hazards associated with the product
- Name and address of the manufacturer




Slide 16

When you transfer a chemical to a smaller, or different container, you must label the new container.

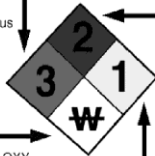
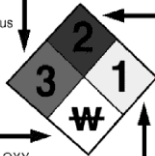
❖ There are 2 labeling systems.

❖ One of them is the National Fire Protection Association's (NFPA's) labeling system.

Do you know what this label means?



Slide 17

HEALTH HAZARD		FIRE HAZARD	
4 - Deadly		Flash Point	
3 - Extreme danger		4 - Below 73° F	
2 - Hazardous		3 - Below 100° F	
1 - Slightly hazardous		2 - Below 200° F	
0 - Normal material		1 - Above 200° F	
		0 - Will not burn	
SPECIFIC HAZARD		REACTIVITY	
Oxidizer		4 - May detonate	
Acid		3 - Shock and heat may detonate	
Alkali		2 - Violent Chemical change	
Corrosive		1 - Unstable if heated	
Use NO WATER		0 - Stable	
Radiation Hazard			

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➤ The other labeling system is the Hazardous Materials Information System (HMIS).

➤ The HMIS system operates on the same principle as the NFPA diamond.

Chemical Name
CAS#
HEALTH <input type="checkbox"/>
FLAMMABILITY <input type="checkbox"/>
REACTIVITY <input type="checkbox"/>
SPECIFIC <input type="checkbox"/>

Slide 19

Key To HMIS Label Numerical Ratings	
HEALTH 4 -Deadly 3 -Extreme Danger 2 -Dangerous 1 -Slight Hazard 0 -No Hazard	REACTIVITY 4 -May Detonate 3 -Explosive 2 -Unstable 1 -Normally stable 0 -Stable
FLAMMABILITY 4 -Flash Point Below 73°F 3 -Flash Point Below 100°F 2 -Flash Point Below 200°F 1 -Flash Point Above 200°F 0 -Will Not Burn	SPECIAL HAZARD Oxidizer Acid Alkali Corrosive Do Not Mix With Water Radioactive Hazard

Slide 20

Training

Workers must be trained on hazards associated with the chemicals which they use, and how to use these products safely.

A cartoon illustration of a man in a suit pointing his right index finger towards a rectangular sign. The sign has the text "Chemical Safety & YOU!" written on it in a bold, sans-serif font.


Slide 21

Did you know that no matter where you work, you could be exposed to hazardous chemicals? You may not have anything hazardous, but your neighbor may!

A cartoon illustration showing three workers in different settings. On the left, a worker in a hard hat and safety vest is kneeling next to a box. In the center, a man in a suit is walking and holding a clipboard. On the right, a worker in a hard hat and safety vest is walking while carrying a bucket.


Slide 22

**There are 4 ways that chemicals
can get into your body.
Do you know what they are?**



Slide 23

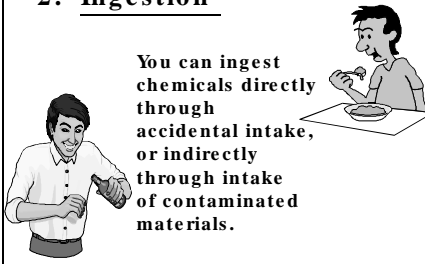
1. Inhalation



**>You can inhale
chemicals in
the form of
fumes, vapors,
gasses, or
aerosols.**

Slide 24

2. Ingestion

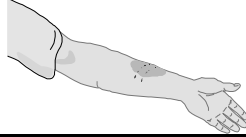


**You can ingest
chemicals directly
through
accidental intake,
or indirectly
through intake
of contaminated
materials.**

Slide 25

3. Skin Absorption

Chemicals can also go directly through the skin. This is known as a dermal exposure, or skin absorption.



Slide 26

4. Injection

Finally, you can also be injected with a chemical agent via a needle stick, or by being punctured with any other type of "sharp" which has been contaminated.



Slide 27

It is possible to work safely with hazardous chemicals as long as you know how to prevent unnecessary or excessive exposures.


How can you protect yourself from a chemical exposure?



Slide 28

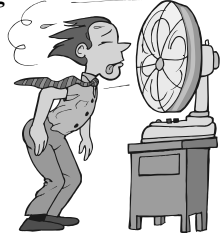
Engineering Controls

➤The preferred way to reduce or eliminate exposures, or potential exposures, is to “Engineer” the problem out. A good example of this type of control measure would be a chemical fume hood or the redesign of a ventilation system.



Slide 29

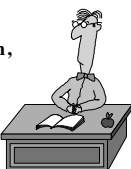
➤An Engineering Control is one which modifies the source or reduces the amount of contaminant released into the work environment.



Slide 30

Administrative Controls

❖The second preference, are methods of controlling employee exposure by job rotation, work assignment, time periods away from the hazard, or training in specific work practices designed to reduce the exposure.



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Personal Protective Equipment




➤ This method of controlling hazards is always the last resort since it relies on people to protect themselves.

Slide 32

❖ When it is not economically or technically feasible to design and implement engineering controls, and administrative controls are not an option, employees must be provided personal protective equipment (PPE).




Slide 33




➤ This equipment must protect them from the specific hazards associated with the chemicals with which they work.

Slide 34

Chemical exposures can be classified into 2 categories:

✓ Acute 

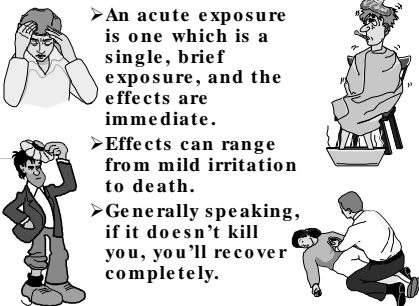
✓ Chronic 

Slide 35

➤ An acute exposure is one which is a single, brief exposure, and the effects are immediate.

➤ Effects can range from mild irritation to death.


➤ Generally speaking, if it doesn't kill you, you'll recover completely.



Slide 36

❖ A chronic exposure is persistent, prolonged, and repeated.


❖ If you are exposed in this manner, usually, by the time you recognize the symptoms of an adverse effect, it is too late. You already have some type of permanent systemic damage.




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Slide 38


1. What are the 4 components of the Hazard Communication Program?
 - a. Engineering, administrative controls, ventilation and personal protective equipment
 - b. Health, fire, reactivity and special information
 - c. Inhalation, ingestion, absorption, and injection information
 -  d. Written program, labels, MSDSs, and training

Slide 39

2. Which color on the NFPA label provides flammability hazard information?
 - a. Blue
 -  b. Red
 - c. Yellow
 - d. White


Slide 40

3. If a chemical gives off vapors, what is the most likely route of exposure?

- a. Dermal
-  b. Inhalation
- c. Ingestion
- d. Injection


Slide 41

4. MSDS is an abbreviation for which of the following.

- a. Management of Safe Devices and Systems
- b. Maintenance and Storage of Demons and Snakes
-  c. Material Safety Data Sheets
- d. Management, Storage and Distribution of Substances


Slide 42

5. Which color on the NFPA label provides reactivity hazard information?

- a. Red
- b. Blue
- c. White
-  d. Yellow


Slide 43

6. Which color on the NFPA label provides health hazard information?

-  a. Blue
b. Red
c. Yellow
d. White


Slide 44

7. Other than in the work area, where can MSDSs be obtained?

-  a. Safety Office and the manufacturer
b. Internet web pages
c. MSDSs are only available in the work area
d. Only from the Safety Office


Slide 45

8. Which of the following is an example of an engineering control?

-  a. Laboratory fume hoods
b. Limiting quantity of chemical used
c. Protective gloves
d. Respirators


Slide 46

9. Which three pieces of information are required to be on the product label?

- a. Health, fire, and reactivity information
-  b. Identity of the hazardous chemical(s), appropriate warning and name/address of the manufacturer
- c. Inhalation, ingestion, and absorption
- d. Labels, MSDSs, and training

Slide 47

10. What are the four routes of entry?

- a. Health, Fire, Reactive and Radioactive
- b. Internal, External, Distal and Median
- c. Ingestion, Inhalation, Injection and Abdominal
-  d. Ingestion, Inhalation, Skin Absorption and Injection

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