

Understanding Hazard Communication

A Port of San Diego Ship Repair Association
Course for Shipyard Workers



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Understanding Hazard Communication

An Injury Prevention Course for Shipyard
Workers



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EXERCISE



FLIPCHART



TARGET ANSWER



KEY QUESTION/QUIZ



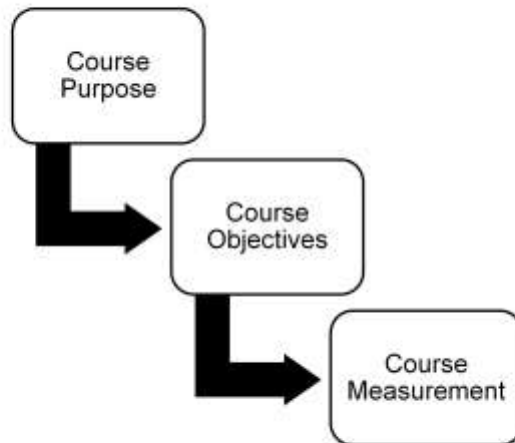
KEY POINT

Use the symbols above as a guide to support you in facilitating your class.

INTRODUCTION – Identify yourself and explain that this class is to support them in understanding and protecting themselves from the hazards associated with harmful chemicals at work.

Read the bottom of Page 1 of the Training Manual

Purpose and Objectives



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Course Purpose:

Read course purpose.



Ask “who uses chemicals to do their job?”



Target answer: All or most.



Key point: This class pertains to all attending

Specific Objectives:

Read and ask if there are questions.

Objective Measurement:

Read and ask if there are questions.

Training Topics



4

Read Training Topics and ask if there are any questions.

Introduction-Pre-Test



5

Handout Pre/Post Test and explain by completing this test they will have a good understanding of the material being covered. Explain this will also establish a benchmark to determine how well the trainer conveyed the information. Ask if there are questions.

Have them circle "Pre" at the top of the test. Have them write the date in the appropriate space. Explain that they will not need to write their names on the pre-test. Allow 5-10 minutes to complete the pre-test and collect the tests. Coordinator will grade tests.

Introduction



6

Hazard Communication Standard

Ask for a participant to read this page.

Thank them.



Ask, "What are chemical manufacturers and importers required to do?"



Target Answer: Prepare labels and safety data sheets and convey to customers.



Ask, "What are all employers required to do?"



Target Answer: "Provide and train employees on labels and safety data sheets."

Ask if there are questions.

Introduction



7

Related Facts

Ask a participant to read page 6.

Thank them.

Ask if there are questions.

Introduction



6

Health Hazards

Read page 7.



Ask, “Who can tell me, in your own words, the difference between an acute health hazard and a chronic health hazard?”



Target Answer: Acute is immediate and chronic is long-term with repeated exposures.

Introduction



Hazardous Material Entry Routes

Read page 8.



Ask participants to think of a chemical they use and how it might enter their body.



Target answer will vary based on chemical and work they do.



Key Point: Chemicals can enter your body in a variety of ways and we must protect ourselves.

Introduction



10

Shipyard Material Hazards

Read page 9.

Explain that these are common chemical hazards found in the shipyard.



Ask participants to put a check mark next to each of the hazards they are exposed to. Allow 2 minutes to complete.



Ask, "How many of you checked multiple hazards?"



Key Point: Most all shipyard workers are exposed to many chemical hazards.

Introduction Exercise



11

Your Exposure!



Read instructions.

Ask participants to do one column at a time (Work then Materials/Chemicals then Effects)

Allow 2 minutes per column. When finished, ask participants, one at a time, to share one of the rows (Work, Materials/Chemicals, Effects) with the class.



Flipchart the Effects



Key Point: We must understand the effects of the chemicals we use and protect ourselves.

In some cases participants may not know the effects of a chemical that they use.



Ask them where they might find that information



Target Answer: SDS

OSHA



12

OSHA and You!

Read the bullets and ask if there are questions.

OSHA



13

Employee's Responsibilities and Rights



For each of the bullets under Responsibilities include:
Ask participants to rate themselves on how they fulfill their responsibilities regarding OSHA compliance next to each bullet.

1 = less than 50% of the time

2 = 50% - 75% of the time

3 = 75% - 100% of the time



Ask the question – “How might your scores impact your risk of injury?”



Target Answer: The higher the score the less the risk.

Read and review the Rights.

OSHA



14

No Retribution

Read page 13.

Be sure participants understand that they are protected from retribution if they file a complaint to OSHA. Reinforce that they are not “telling on a company”, they are reporting a hazard.

OSHA

U.S. Department of Labor
Occupational Safety & Health Administration
www.osha.gov MyOSHA Search Advanced Search | A-Z Index

April 13, 2006 Site Index: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Regulations (Standards - 29 CFR)

Text Search:

Search Clear

Search Help:
General Industry Marine Construction

- PART 70 Production or Disclosure of Information or Materials
- PART 70A Protection of Individual Privacy in Records
- PART 72 Protection of Individual Privacy and Access to Records under the Privacy Act of 1974
- PART 1900 Reserved
- PART 1901 Procedures for State Agreements
- PART 1902 State Plans for the Development and Enforcement of State Standards

Compliance Assistance
• eTools
• Grants
• Hearings
• Employer/Worker
• Posters
• QuickCard
• Quick Start
• Recordkeeping
• Small Business
• Training

Standards & Requirements
• Standards
• Interpretations
• Federal Registers
• Directives
• Dockets & E-Comments

Enforcement
• Federal Agency Programs
• Local Emphasis
• Whistleblower

15

Resolve With Your Company –

Have the participants read this page to themselves.

Explain that their company chain of command is the most practical first step.

Point out that when reporting a hazard, whether on-line or on the telephone, the information can be confidential.

Ask if there are any questions.

OSHA Exercise

Stump the class!

- With a partner, write two questions from this section that you believe the rest of the class will be challenged in answering correctly. (Questions must be reasonable! If your instructor can't answer, it doesn't count!)

16



Read the instructions on the page 15.

Explain that the purpose of this exercise is to know the material that was just covered well enough to ask pertinent questions. Another purpose is to do a review of the material in this section.

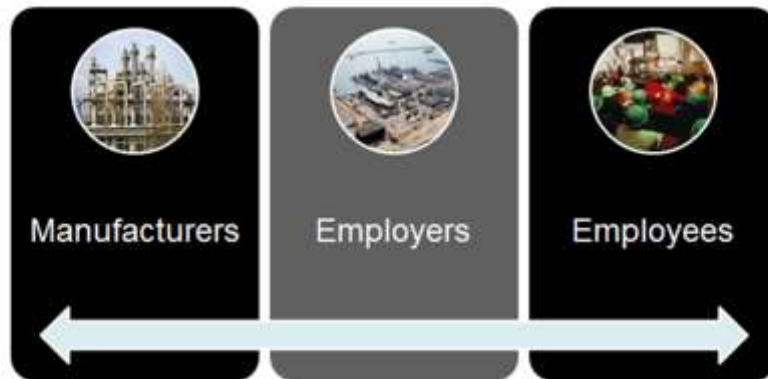
Reinforce that questions must come from the material found in pages 11 – 14.

Allow up to 5 minutes.

Ask volunteers to “stump the class”. To be time appropriate, ask each team for one question only. Allow 4 questions before you call an end to the exercise.

Acknowledge all participants.

How Hazard Communication Works



16

Ask participants to read page 16 and allow 2 minutes for them to do that.

Ask if there are any questions.

The Hazard Communication Program



16

Manufacturers Responsibilities

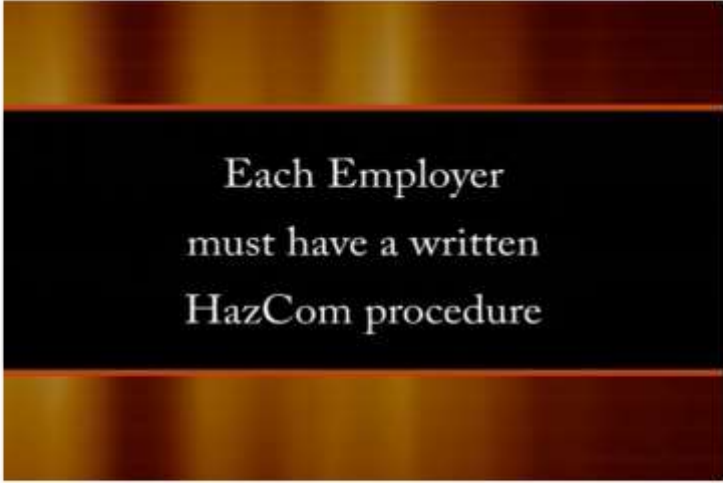
Read this paragraph.

Employer Responsibilities

Explain that the list on page 17 are employer requirements that must be in place to comply with the OSHA Standard.

Explain that you will going into detail regarding labeling requirements and SDS requirements.

The Hazard Communication Program



Each Employer
must have a written
HazCom procedure

19

Checklist for Compliance With Your Hazard Communication Program

Ask a participant to read the employer compliance checklist on page 18.

Ask if there are any questions.

The Hazard Communication Program

Employee HazCom Training

20

Training Requirements

Ask a participant to read page 19 Training Requirements.



Training is not satisfied solely by giving the employee the safety data sheets to read. An employer's training program is to be a forum for explaining to employees not only the hazards of the chemicals in their work area, but also how to use the information generated in the Hazard Communication Program.

The Hazard Communication Program



21

Related Facts

Ask a participant to read page 20.

Ask if there are questions.

The Hazard Communication Program



22

What Needs to be Trained

Ask a participant to read page 21.

Ask if there are questions.

The Hazard Communication Program Quiz



23

For each statement below circle 'T' for True or 'F' for False.



Ask the participants to team up and answer the questions on page 22 collectively.

Allow 4-5 minutes to complete.

Read each question and ask a team to answer. Acknowledge all answers.

T	F	You must train employees only when new chemicals are introduced into their work area.
T	F	Employers are responsible to obtain SDS's and labels for each hazardous chemical, if not provided by the manufacturer, importer or distributor.
T	F	Training need not be conducted on each specific chemical found in the workplace, but may be conducted by categories .
T	F	It is the employees responsibility to know the location of the SDS sheets in his or her workplace.

GHS– What is it?



24

Ask a participant to read page 21.

Ask if there are questions.

GHS – Why Adopt It?



25

Ask a participant to read this.

Provide example of one or more of the bullets.

Ask a participant to read this.

Provide example of one or more of the bullets.

Hazard Classification



26

Read each bullet.

After finishing the second bullet explain hazard categories as they are not in the training manual. See below:

It's important to note, the GHS categories are similar yet contradictory to the HMIS/NFPA ratings: The GHS 1 – 4 rating system ranks 4 as the least severe while NFPA's rank 4 is most severe.

Hazard Class	Associated Hazard Category
Explosives	Divisions 1.1-1.6 (with 1.1 being the most hazardous, 1.6 the least hazardous)

Hazard Classifications



27

Physical Hazard

Have participants read this column to themselves.

Recap by saying that the hazards are classified by three major classes:

Physical

Health

Environmental

Within these classes are more specific classes listed here.

Health Hazard

Have participants read this column to themselves.

Recap by saying that hazards are classified by Health hazards as well as Physical hazards.

Ask if there are questions.

EXERCISE

Stump the class!

- With a partner, write two questions from this section (page 16 to 27) that you believe the rest of the class will be challenged in answering correctly. (Questions must be reasonable! If your instructor can't answer, it doesn't count!)

28



Read the instructions on the page 27.

Explain that the purpose of this exercise is to know the material that was just covered well enough to ask pertinent questions. Another purpose is to do a review of the material in this section.

Reinforce that questions must come from the material found in pages 23 – 26.

Allow up to 5 minutes.

Ask volunteers to “stump the class”. To be time appropriate, ask each team for one question only. Allow 4 questions before you call an end to the exercise.

Acknowledge all participants.

Labeling

Chemical Name	n-Propyl Alcohol	
Product Identifier	UN 5548 Cas# 55-45-8	
Signal Word	DANGER	
Hazard Statement	Highly flammable liquid and vapor. Causes serious eye damage. May cause drowsiness and dizziness.	
Precautionary Statement	Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing fumes/mist/sprays/aerosols. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing.	
	Net Weight: 14.05 lbs. Lot Number: 836222434 Gross Weight: 15lbs. Fill Date: 8/10/2014 Expiration Date: 6/10/2021	See SDS for further information.
Supplier Identification	EPI Chemical Company • 342 Jones Road • Duven, PA 17315 • www.epichem.com • 987-555-4444	

29

Requirements

Read page 28.

Ask if there are questions.

Labels



30

Label Requirements

As you read each bullet, point to the location of each on the slide.

Ask if there are questions.

Pictograms And Hazards



31

Explain that it is unlikely that all of the participants will remember each bullet under each pictogram. It is important, however, that they understand what they are handling, working with or even what chemical hazards are in their working environment. To that end, it is important to know what each pictogram represents.

Go through each pictogram and generally explain what each represents.

Explain that there is going to be quiz on the next page, so you are going to give the participants 5 minutes to study. First, you will give them 3 minutes to study by themselves and then 3 minutes to study with their partner.

Ask if there are questions.

Give participants 5 minutes to study by themselves.

Give participants 3 minutes to study with a partner.

Pictogram Exercise

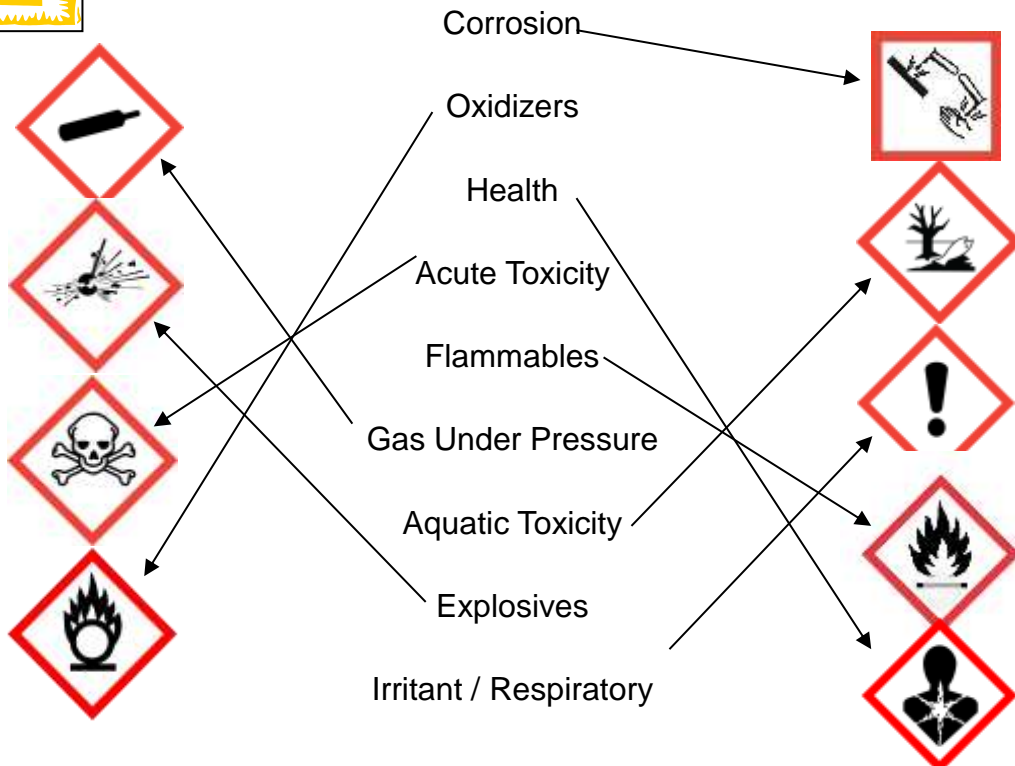


32

Draw a line from the hazard to the correct pictogram



In teams of two ask participants to draw a line from each hazard to the correct pictogram. Ask each team to share one word at a time.



Label Requirements

EPICHLOROHYDRIN ¹

UN No. 2023
CAS No. 106-89-8

² **DANGER**

⁴ Flammable liquid and vapor. Toxic if swallowed. Toxic in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause cancer.

⁵ Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection.

Fill Weight: 18.52 lbs. Lot Number: A032311323
Gross Weight: 20 lbs Fill Date: 1/15/2012
Expiration Date: 1/15/2018

⁶ JACKSON CHEMICAL COMPANY - City of Industry, Los Angeles, California, USA (800)-444-456-8989

33

Label Requirements

Go through the six label requirements and use a pointer to highlight each as you go through them.

Ask if there are questions.

Read:

1) These requirements do not have to be listed on the in this order.

Label Requirements Exercise

The Six Elements of a GHS Label

The diagram shows a GHS label for Carbon Monoxide. The label is rectangular and contains the following elements:

- 1:** Signal word: "DANGER"
- 2:** Pictogram(s): Three red diamond-shaped pictograms (flame, skull and crossbones, and a person with a star over their chest).
- 3:** Product identifier: "Carbon Monoxide"
- 4:** Hazard statements: "H220: Extremely flammable gas. - H331: Toxic if inhaled. - H360D: May damage the unborn child. - H372: Causes damage to organs through prolonged or repeated exposure"
- 5:** Precautionary statement(s): "Keep container tightly closed. Avoid breathing vapours. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Center or doctor. Store in a well-ventilated place."
- 6:** Supplier information: "10.0 L", "3030 09-0 009-001-09-0", "Company 888 1234-5678 9010 1111 1212 1313 1414 1515 1616 1717 1818 1919 2020"

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Label Requirements



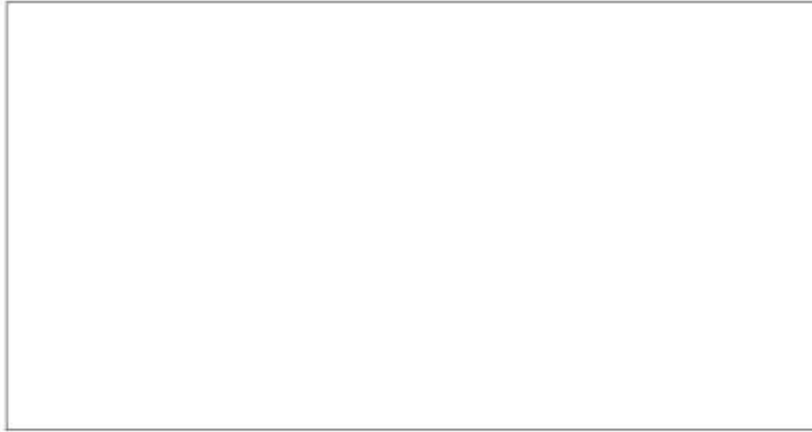
Ask participants, in teams of two, to write the requirements below, that they just went over on the previous page, that corresponds with the number above. Give the participants 3 minutes to complete. Ask participants to share their answers one at a time.

Acknowledge all answers.

- 1) Product identifier
- 2) Signal word (Danger or Warning)
- 3) Pictogram(s)
- 4) Hazard Statements
- 5) Precautionary statement(s)
- 6) Name, address, and phone number of the responsible party

Draw A Label (Exercise)

Create a label that complies with the GHS format using the information at the bottom of this page.



35



Now ask the participants, individually, to draw a label based on the information in their training manual. Allow 7-8 minutes to complete. When they are finished, ask participants to share their labels with their partner. Walk around the room and provide input to each group.

Ask if there are questions.

Labeling



36

Exceptions

Ask participants to read page 35 to themselves.

Read the third bullet:

“You are not required to label portable containers into which hazardous chemicals are transferred from labeled containers and are intended only for the immediate use **of the employee who makes the transfer**”.

Explain that though OSHA allows this, the shipyards where they work do not. All portable containers must be labeled.

Ask if there are questions.

Labeling



37

For each statement below circle 'T' for True or 'F' for False.



Ask the participants to team up and answer the questions on page 36 collectively.

Allow 4-5 minutes to complete.

Read each question and ask a team to answer. Acknowledge all answers.

T	F	One of the pictograms represents an exploding bomb.
T	F	A "signal word" could be either Danger or Warning.
T	F	Every label must have at least 5 elements.
T	F	A hazard classification will be either Physical or Mental.

Safety Data Sheets



36

Safety Data Sheets

Read page 37.



Explain that the SDS has taken the place of the MSDS.

SDS



39

Manufacturer and Distributor Requirements

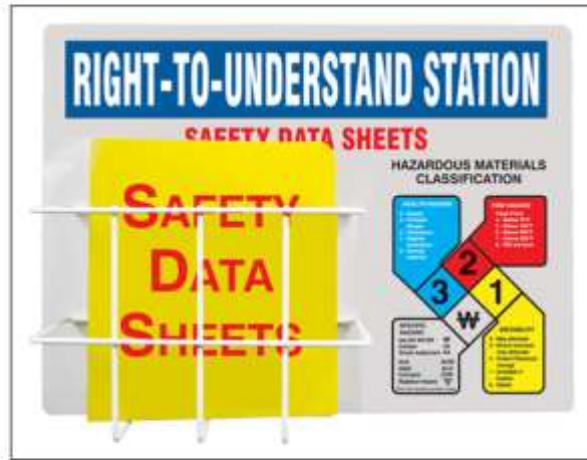
Ask a participant to read the first paragraph.

Ask if there are questions.

Ask a participant to read the second paragraph.

Ask if there are questions.

SDS



40

Employer Responsibilities

Read page 39 and ask if there are questions.

SDS



41

Employee Responsibilities

Ask a participant to read this page.



Reinforce the point: These are your responsibilities!

SDS Questionnaire



42



Read the first sentence and give participants a few seconds to answer. Read each bullet and provide a few seconds to respond.

When finished asked how many participants answered yes to every bullet.

Tell the participants that if they did not answer yes to each bullet their “homework” is to turn the “No” into a “Yes”!

Safety Data Sheets (SDS)



43

MSDS – 1994

Ask participants to read both paragraphs to themselves. Allow about one minute to do this.

SDS – Current



Ask: Just based on these two paragraphs, what are the differences between the old MSDS systems and the SDS system?



Target answer: A universal and consistent order and format.

Safety Data Sheets – 16 Headings



44

Reinforce that SDSs have a universal format and 16 information requirements.

Go through each one and ask what the participants believe each section means.

Ask if there are questions.

16 Headings Exercise-Put In Order!

Section 1: Toxicological

Section 2: Accidental release measures

Section 3: Composition/information on ingredients Substance/Mixture

Section 4: First aid measures

Section 5: Firefighting measures

Section 6: Exposure controls/personal protection.

Section 7: Physical and chemical properties

Section 8: Identification of the Substance or mixture and of the supplier

Section 9: Handling and storage

Section 10: Stability and reactivity

Section 11: Hazard Identification

Section 12: Ecological information (non mandatory)

Section 13: Disposal considerations (non mandatory)

Section 14: Transport information (non mandatory)

Section 15: Regulatory information (non mandatory)

Section 16: Other information including information on preparation and SDS revision

45



Ask the participants, individually, to put in the proper order. After 3 or 4 minutes ask them to compare their work with that of their partners. Ask them to come to consensus on the proper order. Allow 5-6 minutes to do this. When finished ask if there is any time that would like to share their information.

Acknowledge participation.

Ask if there are questions.

Safety Data Sheets Exercise

Based on the information below, what PPE requirements would you follow in handling Benzene?

- _____
- _____
- _____
- _____
- _____

Where would you find the actual and specific PPE requirements on the SDS?

- _____

46



Ask the participants, individually, to answer the first question (left column) on the screen or the top of their training manual.



Respirator. Face shield. Coveralls or other appropriate body protection. Gloves.



Ask the participants, individually, to answer the second question.



Section 8.



Using the SDS it was much easier to find the information and it left

no room for doubt.

GHS Changes – When?



46

Let participants read page 46 to themselves.



This should be fully implemented in your organizations.

Labeling & SDSs at the MSRs



48

Host Yard Rules!

Read page 47.

Site any examples that reinforce these points.

Ask if there are questions.

Labeling & SDSs at the MSRs

Health Hazard  <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity 	Flame  <ul style="list-style-type: none"> • Flammable • Pyrophoric • Self-Heating • Easily Flammable Gas • Self-Reactant • Organic Peroxides 	Exclamation Mark  <ul style="list-style-type: none"> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ocean Layer (Non-Mandatory)
Gas Cylinder  <ul style="list-style-type: none"> • Gases Under Pressure 	Corrosion  <ul style="list-style-type: none"> • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals 	Exploding Bomb  <ul style="list-style-type: none"> • Explosives • Self-Reactives • Organic Peroxides
Flame Over Circle  <ul style="list-style-type: none"> • Oxidizers 	Environment (Non-Mandatory)  <ul style="list-style-type: none"> • Aquatic Toxicity 	Skull and Crossbones  <ul style="list-style-type: none"> • Acute Toxicity (fatal or toxic)

SAFETY DATA SHEET

(The image shows a detailed Safety Data Sheet form with various sections like Hazard Identification, Composition, and Precautionary Statements.)

48

Important

Ask a participant to read page 48.

Key points: Know where to dispose of your hazardous waste when working off site and be sure there is a spill kit and fire extinguisher at this location



If you are not sure of a substance someone is using, or the hazards the substance presents, ask to see their SDS.

Know where the SDS's are kept wherever you are working!

SDS Quiz



50

For each statement below circle 'T' for True or 'F' for False.



One question at a time, ask the participants together to answer the questions on page 49.

Ask if there are questions.

Post-Test



51

Hand out Feedback Form and ask participants to complete. Allow 4-5 minutes.

Handout Pre/Post Test and explain by completing this test we will be able to identify how well the trainer conveyed the information. Ask if there are questions.

Have them circle "Post" at the top of the test. Have them write the date in the appropriate space. Ask them to write their names on the post-test. Allow 5-10 minutes to complete the pre-test and collect the tests. Coordinator will grade tests.

Questions / Comments



52

Ask participants if they have any final questions.

Thank participants for the time and effort.