Instructor's Guide

"Hazard Communication"
IN THE KNOW

Training for THE OSHA
Personal Protective Equipment STANDARD

The Occupational Safety & Health Administration (OSHA) 1910.1200

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Introduction

The instructor guide is designed to be a comprehensive tool for facilitating the course. Thoroughly reviewing this document, as well as all related course materials and resources, will prepare you to teach the course.

Background

Hazardous chemicals – they are found in more than 7 million workplaces and over 55 million employees handle, use or work around these potentially harmful substances throughout the U.S. While these substances are essential to many work processes in a variety of industries, they can also be very dangerous.

Exposure to these chemicals can cause effects ranging from mild skin irritations to serious health problems, such as heart and organ damage or cancer. Some chemicals present hazards, such as the potential to cause fires or explosions.

To help us become aware of these hazards and to understand how to protect ourselves from them, the Occupational Safety and Health Administration (OSHA) has developed the “Hazard Communication Standard” (29 CFR 1910.1200).

The Hazard Communication Standard establishes uniform requirements to make sure that hazard information is communicated to all employees and employers.
Commonly referred to as HazCom, or the “Right to Know” law, this regulation gives you the right to know which chemicals are being used in your workplace, and the possible dangers you are being exposed to.

You also have the right to know how to protect yourself when using hazardous chemicals. As part of the Hazard Communication Standard, your employer is required to provide you with the knowledge and training necessary for you to do your job safely.

In 2012, OSHA aligned its Hazard Communication Standard with the United Nation’s Globally Harmonized System for Classification and Labeling Chemicals (GHS).

While OSHA maintained the framework of its traditional HazCom Standard, it adopted the GHS hazard definitions, and safety data sheet and labeling formats. GHS mandates a standard format for information on every hazardous chemical, and it’s a worldwide standard for the countries that choose to use it.

Prior to GHS there was an inconsistency of information that often brought about confusion and uncertainty for employers and employees.

The HazCom Standard mandates that your employer complies with five regulatory requirements:

- Create an inventory of all hazardous chemicals at the workplace.
- Ensure each chemical has a GHS-style safety data sheet, or SDS, that is easily accessible to all employees who work with that chemical.
- Ensure each chemical container is properly labeled with a GHS-style approved label or an OSHA-compliant workplace label.
- Create and implement an employee HazCom training program
- Develop a written program that describes what the HazCom program is and how the HazCom program has been implemented.

Course Outline

This course is organized by sections. Within each section there may be multiple lessons.

The sections in this course are as follows:

- Hazard Classification
- Safety Data Sheets
- Labeling
- Information and Training
- Control Measures

Course Review

These materials are to be used as guidance for facilitating the presentation. As with any educational program, the facilitator should go through the entire program at least once to become familiar with the content and make sure the program is consistent with company policy and directives.

Preparing for the Session

Structuring the Presentation

- Share the learning objectives with the participants.
- Determine target audience to adjust training if needed.
- Establish plan to actively involve participants in the learning experience.
- Practice training techniques to build rapport with audience.

Creating the Environment / Setting up the Session

- Confirm the training dates, location, and number of participants.
- Ensure the room is set up properly, e.g., tables and chairs are arranged to maximize whole-class and small group interaction without participants needing to turn chairs around, projectors do not block participants' line of sight, flip charts are convenient to you and visible to participants, and so forth.
- Start on time and stay on track. Keep exercises within their time limits. End discussions when they cease to be productive.

Facilitating the Session

Getting Started

- Introduce yourself as the session leader.
- Circulate the session roster before the training begins.
- Introduce the title of the program (IN THE KNOW) and begin playing the HAZCOM training video.
- If you are using the DVD version of the course you have several options as to how you can move through the program and what employees see.
- The DVD menu has three "selection bars":
    - "Play"
    - "Scene Index"
    - "Contact Info"
- To just play the program from beginning to end, select "Play".
- All of our DVDs, both English and Spanish, are subtitled (similar to closed captioning). If there are hearing impaired employees participating in your training session, or you want people to be able to read the program narration as well as hear it, push the "subtitle" button on your DVD player's remote control or the player's control panel. A print version of the narration will then appear on the screen as the video plays.

Facilitating the Discussion

- After the program has been shown, it is time for the group discussion on the information contained in the session.
- The instructor facilitates the activities and guides the conversation so that learners take away the ability to apply that knowledge in the field and internalize best practices.
- Closely monitor group activities. Walk among groups as they work; answer questions and offer guidance as appropriate. Give constructive feedback during the share-out sessions and discussions.

Review Learning Outcomes

- Check to make sure that all attendees signed the session roster.
- Ensure that each participants completes end of course quiz.
- Distribute course certificates

Core Curriculum

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Facilitation Guidance:

Hazard Classification – 1910.1200 (d)

Some chemicals are explosive, corrosive, flammable, or toxic. Other chemicals are relatively safe to use and store but may become dangerous when they interact with other substances. To avoid injury and/or property damage, persons who handle chemicals must understand the physical and health hazards of the chemicals.

A hazardous chemical is any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.
Physical hazards are those chemicals that can cause a fire, explosion, or some other violent reaction when they come in contact with air, water or other chemicals.

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Section 1

Hazard Classification – 1910.1200 (d)

- Chemicals that threaten people's health are called "health hazards."
- By entering the body in one of three ways – inhalation, skin contact or ingestion – these chemicals can cause both short-term, or acute, health problems; and long-term, or chronic, health problem.

9.

Facilitation Guidance:

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Section 1

Hazard Classification – 1910.1200 (d)

OSHA considers any chemical to be a health hazard if it is:

- Toxic,
- Corrosive to the skin or eyes,
- A respiratory sensitizer,
- A cause of cancer, birth defects, or reproductive issues,
- Harmful to specific organs in the body,
- Harmful or deadly when inhaled.

10.

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- Harmful to specific organs in the body,
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Facilitation Guidance:

Safety Data Sheets – 1910.1200 (g)

OSHA requires that each company keep a complete and up-to-date inventory of its hazardous chemicals.
This list not only identifies all hazardous chemicals on site, it is used to make sure each chemical is accounted for, is properly labeled and has an up-to-date SDS.

This brief overview provides guidance to help workers who handle hazardous chemicals to become familiar with the format and understand the contents of the SDSs.

Employers must ensure that SDSs are in English and readily accessible to employees at all times.

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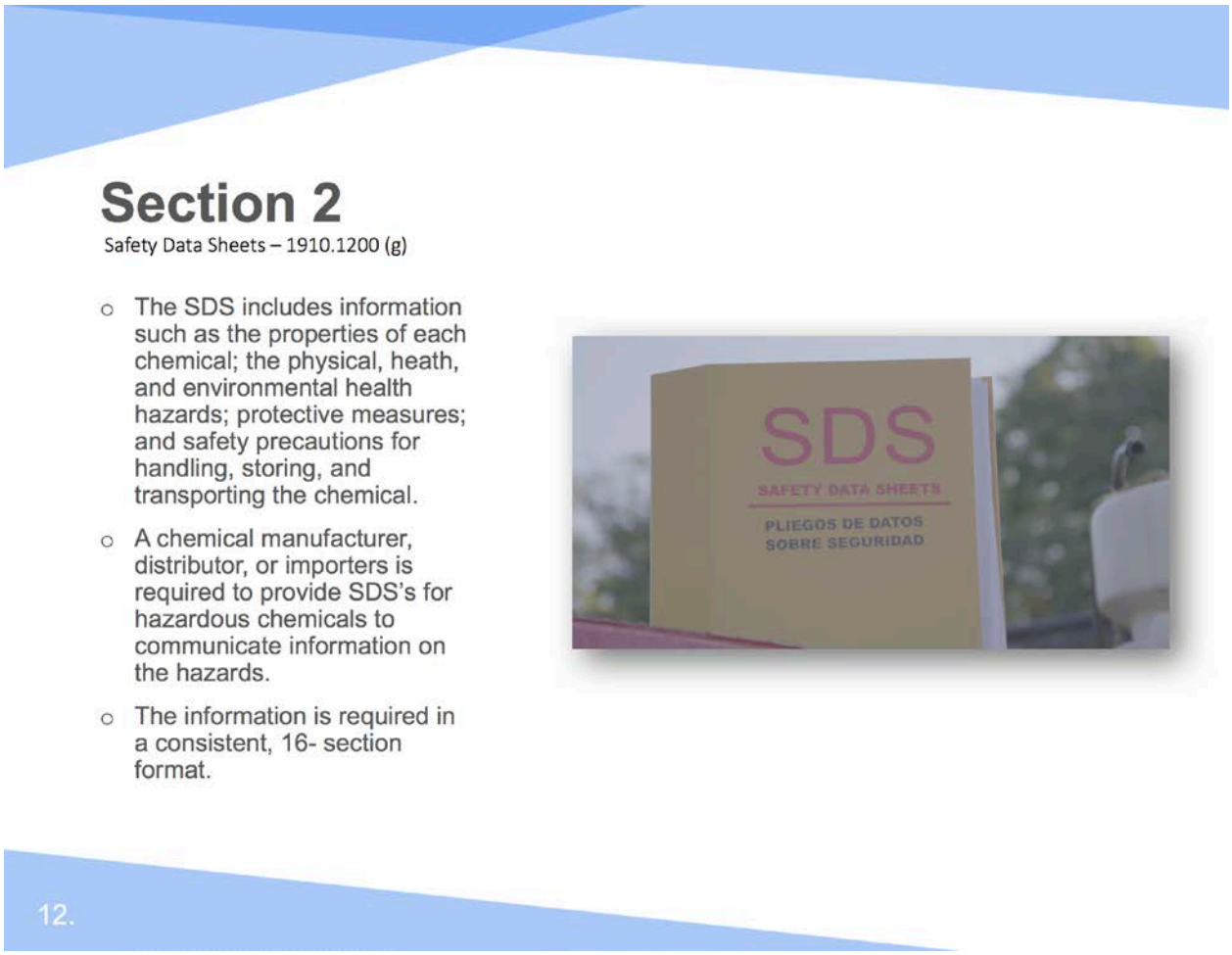

Facilitation Guidance:

The SDS includes information such as the properties of each chemical; the physical, heath, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical.

A chemical manufacturer, distributor, or importers is required to provide SDS's for hazardous chemicals to communicate information on the hazards. The information is required in a consistent, 16- section format.

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Section 2

Safety Data Sheets- 1910.1200 (g)

The 16 sections in a SDS are briefly described below:

- **Section 1** provides the product and company identification. It includes the official name of the chemical, as well as other names it goes by
- **Section 2** identifies the hazards posed by the chemical, along with the information that's required to be on the chemical's label including the pictograms, signal word, hazard statements and precautionary statements.

13.

Facilitation Guidance:

<u>The 16 sections in a SDS are briefly described below:</u>

Section 1 provides the product and company identification. It includes the official name of the chemical, as well as other names it goes by. This section may also contain recommended uses of the chemical and restrictions on its use, the supplier's details, including name, address and phone number, and an emergency phone number.

Section 2 identifies the hazards posed by the chemical, along with the information that's required to be on the chemical's label including the pictograms, signal word, hazard statements and precautionary statements.

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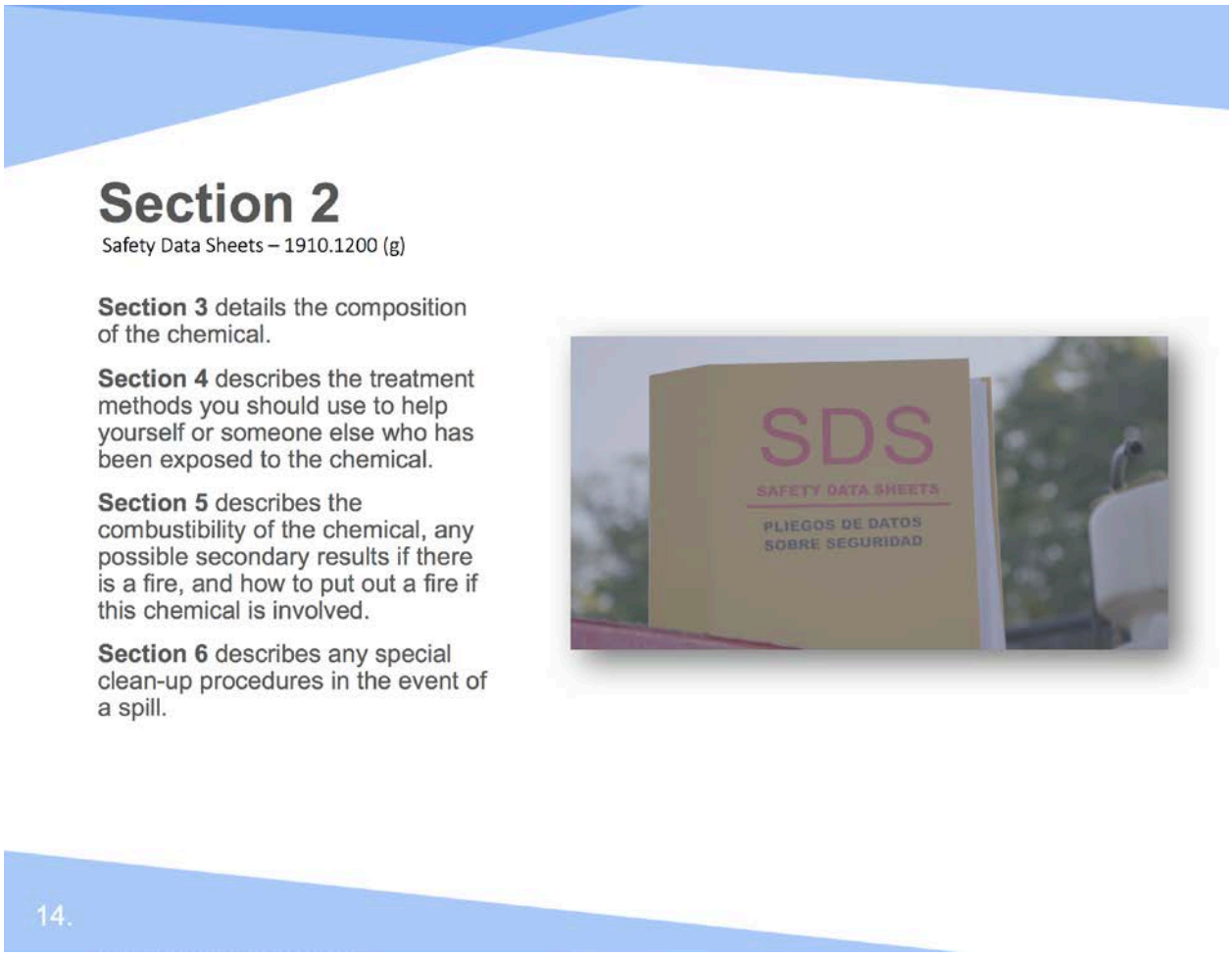

Facilitation Guidance:

Section 3 details the composition of the chemical. It lists the ingredients that have been used to create the chemical, and which of those are known to be hazardous.

Section 4 describes the treatment methods you should use to help yourself or someone else who has been exposed to the chemical.

Section 5 describes the combustibility of the chemical, any possible secondary results if there is a fire, and how to put out a fire if this chemical is involved.

Section 6 describes any special clean-up procedures in the event of a spill.

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Facilitation Guidance:

Section 7 outlines the safe ways to work with and store the chemical.

Section 8 shows the minimum amount of time a person could be exposed to the chemical before being potentially affected, and how to protect yourself through proper clothing and handling techniques.

Section 9 describes the chemical's characteristics, such as it normal appearance, odor, solubility, melting and freezing points, flash point, evaporation rate, flammability, vapor pressure and density.

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Facilitation Guidance:

Section 10 describes how stable the chemical is as well as the conditions that created instability.

Section 11 identifies the degree in which the chemical is poisonous as well as other potential health hazards. This section lists both acute and chronic health conditions that can result from over-exposure to the chemical.

Section 12 describes how the chemical interacts with the environment including how long it will last, how it spreads and any other pertinent information.

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Section 2

Safety Data Sheets – 1910.1200 (g)

- **Section 13** explains how the chemical should be discarded.
- **Section 14** includes instructions on the safe and unsafe ways of moving the chemical.
- **Section 15** describes the safety, health and environmental laws specific to the chemical.
- **Section 16** includes any additional details that are important to disclose regarding the chemical as well as the date the SDS was prepared.

17.

Facilitation Guidance:

Section 13 explains how the chemical should be discarded.

Section 14 includes instructions on the safe and unsafe ways of moving the chemical.

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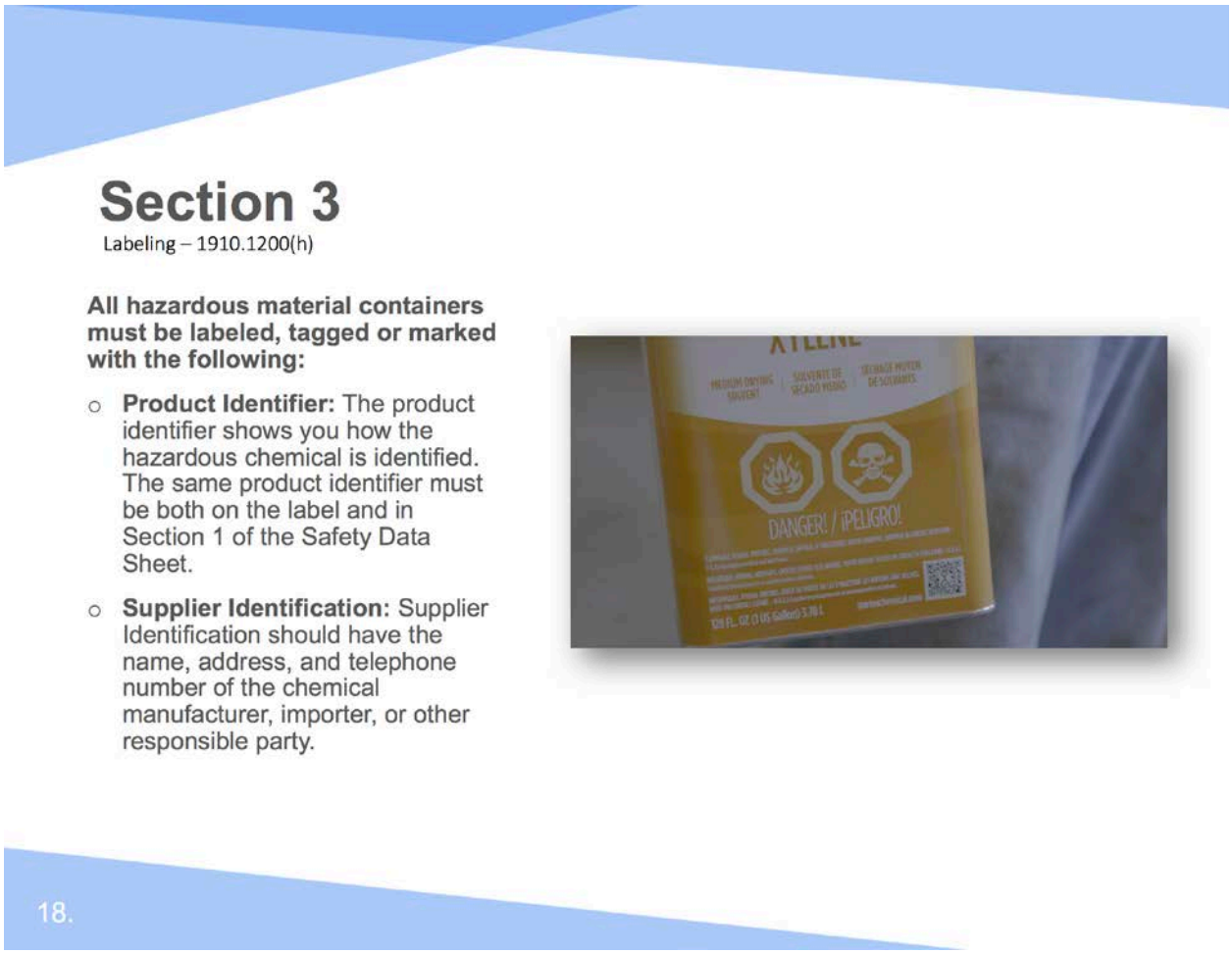

Facilitation Guidance:

Labeling – 1910.1200 (h)
Labels are an immediate source of information for the person working directly with a chemical. We should always read labels before starting to work with a chemical. The revised Standard continues to allow employers the flexibility to use other alternate workplace labeling systems such as the National Fire Protection Association (NFPA) 704 diamond system or Hazardous Material Identifications System (HMIS). The GHS does not specify a label format or layout but requires the inclusion of several elements.
<u>All hazardous material containers must be labeled, tagged or marked with the following:</u>
Product Identifier: The product identifier shows you how the hazardous chemical is identified. The same product identifier must be both on the label and in Section 1 of the Safety Data Sheet.
Supplier Identification: Supplier Identification should have the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

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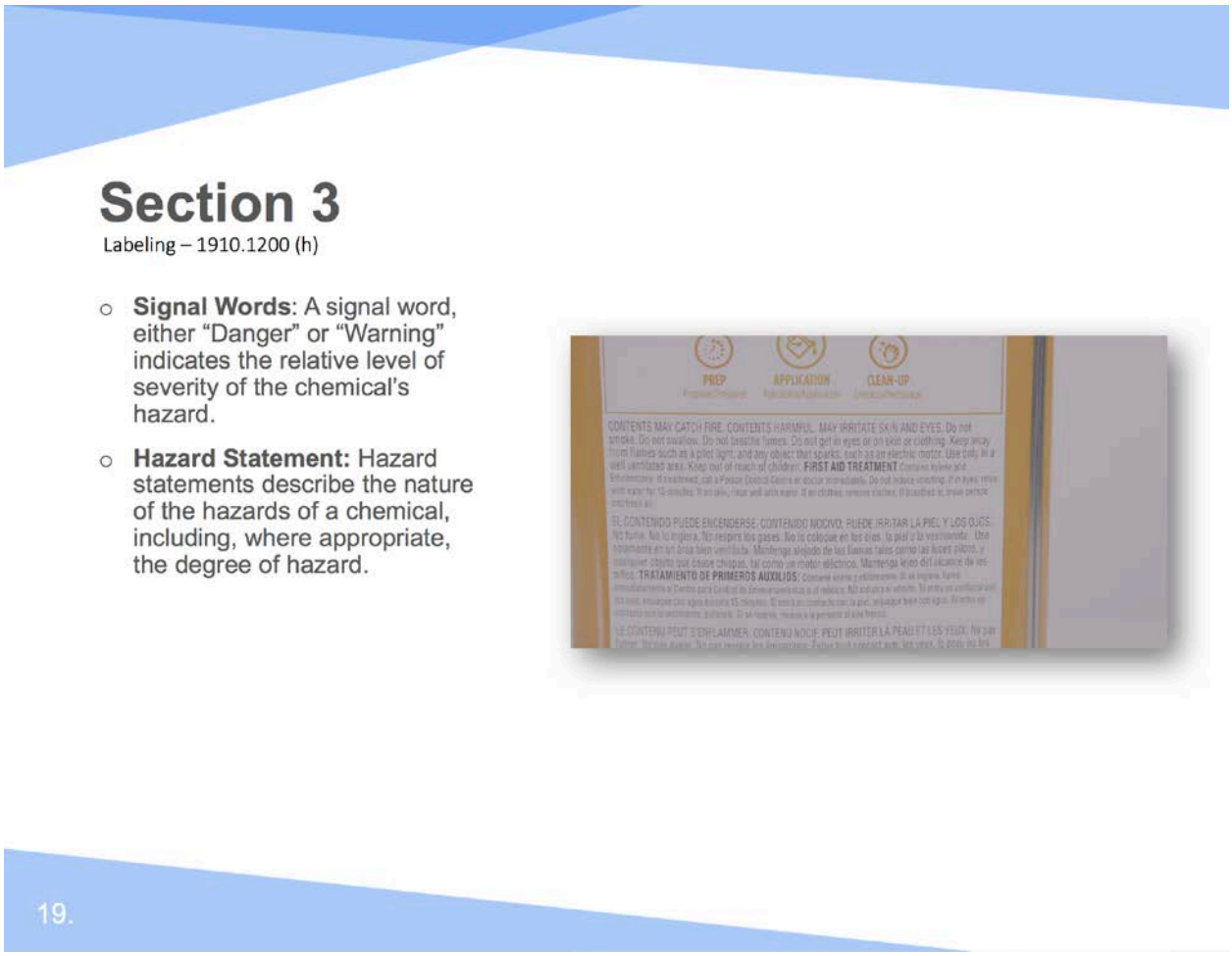

Facilitation Guidance:

Signal Words: A signal word, either "Danger" or "Warning" indicates the relative level of severity of the chemical's hazard. "Danger" is used for the more severe hazards and "Warning" is used for the less severe hazards. There will only be one signal word on the label no matter how many hazards a chemical may have.

Hazard Statement: Hazard statements describe the nature of the hazards of a chemical, including, where appropriate, the degree of hazard. The same statements will always be used for the same hazards, no matter what the chemical is or who produces it.

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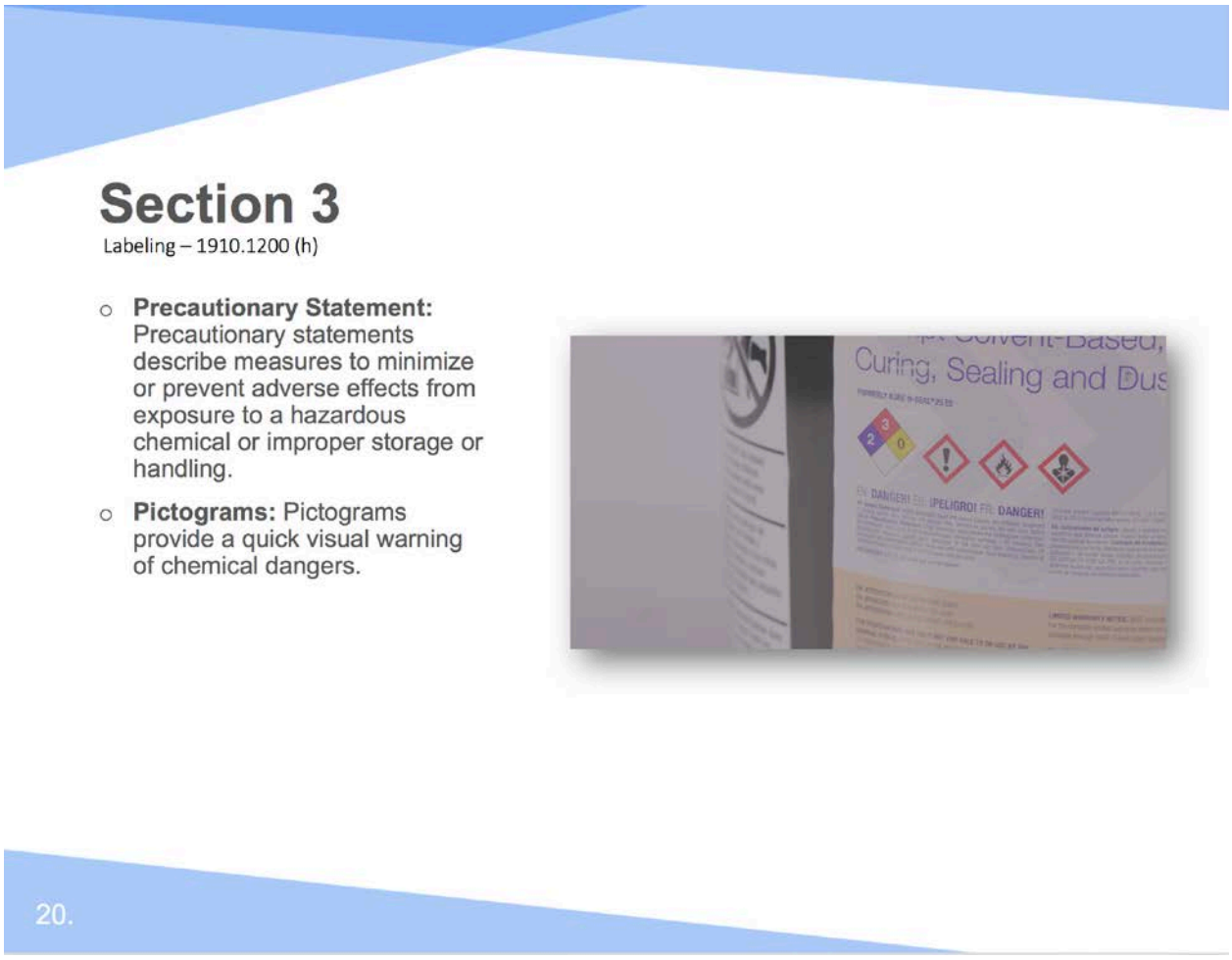

Facilitation Guidance:

Precautionary Statement: Precautionary statements describe measures to minimize or prevent adverse effects from exposure to a hazardous chemical or improper storage or handling.

Pictograms: Pictograms provide a quick visual warning of chemical dangers.

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Facilitation Guidance:

Health Hazards indicate chemicals that are carcinogens, mutagenic, toxic, and that can cause respiratory sensitivity.

Flame is used for flammables, pyrophorics, self-heating chemicals, flammable gas, self-reactives, and organic peroxides.

Exclamation Mark warns of skin and eye irritants, skin sensitizers, acute toxicity, narcotic effects, and respiratory tract irritants.

Gas Cylinder indicates gas under pressure.

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Section 3

Labeling – 1910.1200 (h)

- Corrosion warns that the chemical may cause skin corrosion, burns, and eye damage, and is corrosive to metals.
- Exploding Bomb is used for explosives, self-reactives, and organic peroxides.
- Flames-over-circle marks oxidizers.
- Skull and Crossbones warns of fatal or acute toxicity.
- Environmental indicates aquatic toxicity.

22.

Facilitation Guidance:

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Skull and Crossbones warns of fatal or acute toxicity.

Environmental indicates aquatic toxicity.

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Section 3

Labeling – 1910.1200 (h)

It is extremely important that all containers of chemicals are properly labeled:

- All containers will have the appropriate label, tag, or marking prominently displayed.
- Portable containers which contain a small amount of chemical need not be labeled if they are used immediately and completely.
- If the portable container will be used by more than one employee or used over the course of more than one shift, the container must be labeled.

23.

Facilitation Guidance:

If a chemical has multiple hazards, different pictograms are used to identify the various hazards.

<u>It is extremely important that all containers of chemicals are properly labeled:</u>

- All containers will have the appropriate label, tag, or marking prominently displayed.
- Portable containers which contain a small amount of chemical need not be labeled if they are used immediately and completely.
- If the portable container will be used by more than one employee or used over the course of more than one shift, the container must be labeled.

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Section 3

Labeling – 1910.1200 (h)

- All warning labels, tags, etc., must be maintained in a legible condition and not be defaced.
- Labels must be in English.
- Incoming chemicals are to be checked for proper labeling.
- All materials will have the appropriate pictogram affixed to the label.

24.

Facilitation Guidance:

All warning labels, tags, etc., must be maintained in a legible condition and not be defaced. Labels must be in English.

Incoming chemicals are to be checked for proper labeling.

All materials will have the appropriate pictogram affixed to the label.

The employer must ensure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked with the identity of the hazardous chemical(s) contained therein; and must show hazard warnings appropriate for employee protection.

You should always review a container's label before using the chemical to ensure that it is in fact the chemical you believe it to be. You never know when a container that you think you are familiar with gets changed.

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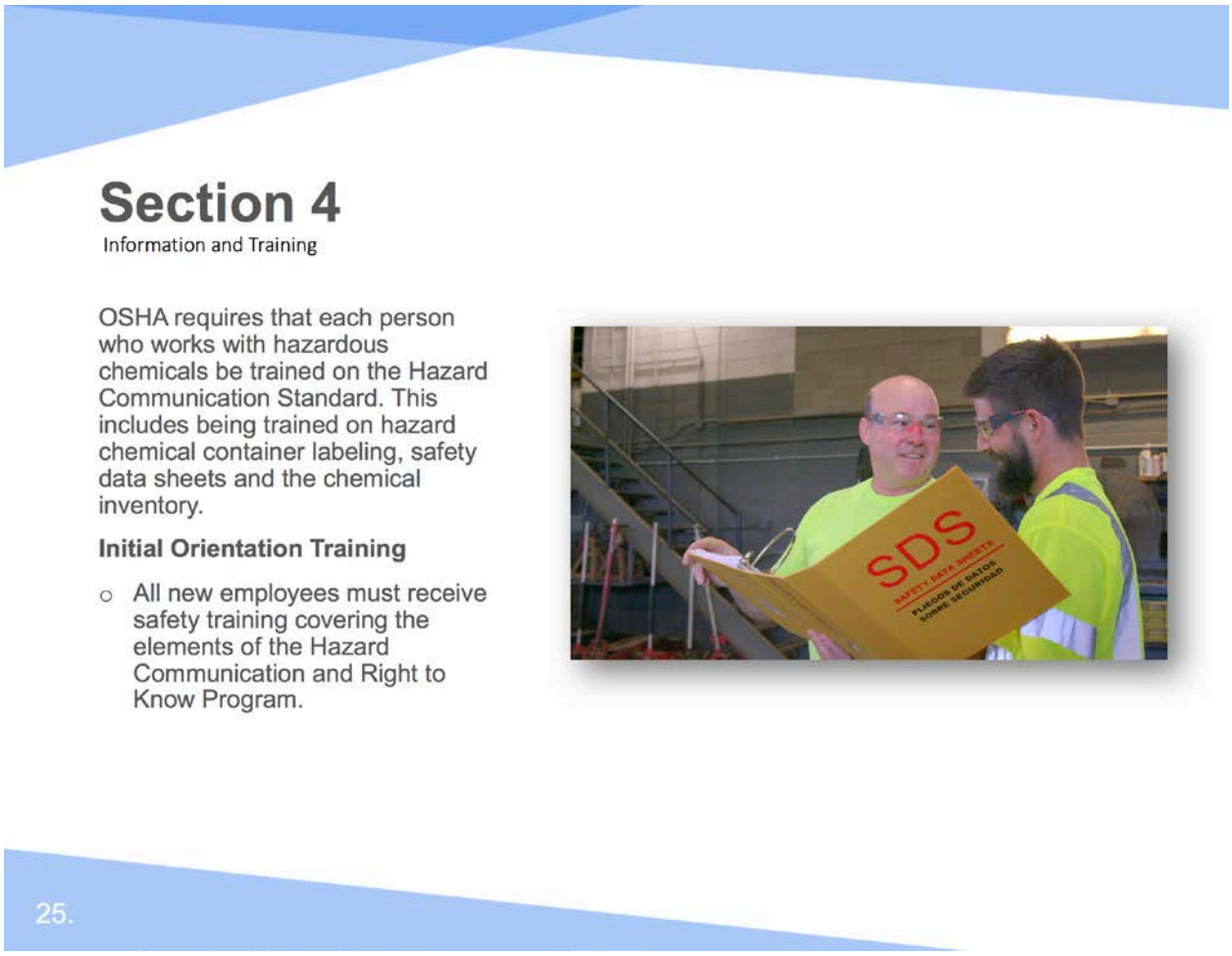

Facilitation Guidance:

Information and Training
OSHA requires that each person who works with hazardous chemicals be trained on the Hazard Communication Standard. This includes being trained on hazard chemical container labeling, safety data sheets and the chemical inventory.

Employers must provide employees with information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new hazard is introduced into their work area.

Initial Orientation Training
All new employees must receive safety training covering the elements of the Hazard Communication and Right to Know Program.

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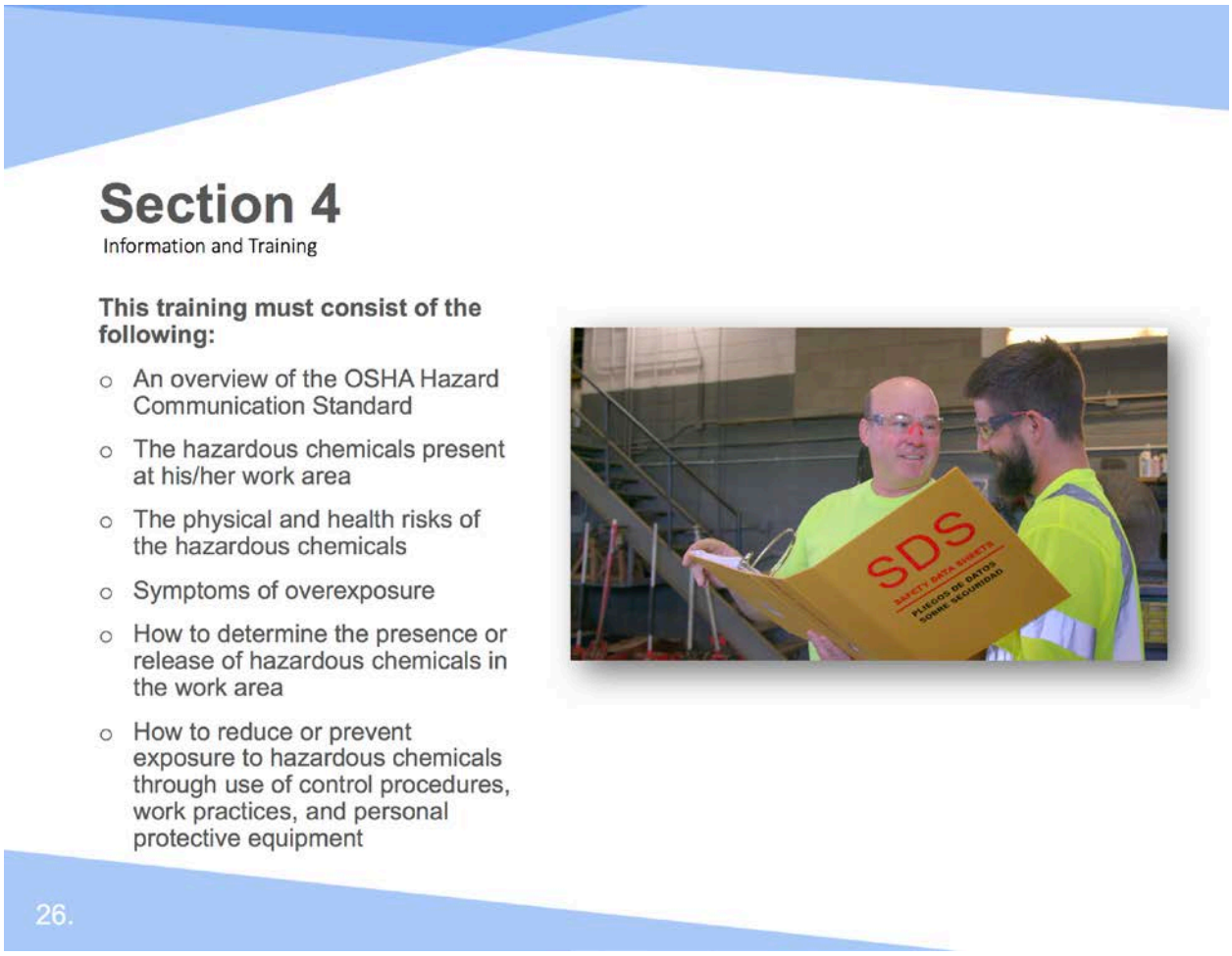

Facilitation Guidance:

This training must consist of the following:

- An overview of the OSHA Hazard Communication Standard
- The hazardous chemicals present at his/her work area
- The physical and health risks of the hazardous chemicals
- Symptoms of overexposure
- How to determine the presence or release of hazardous chemicals in the work area
- How to reduce or prevent exposure to hazardous chemicals through use of control procedures, work practices, and personal protective equipment

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Facilitation Guidance:

- Steps the company has taken to reduce or prevent exposure to hazardous chemicals
- Procedures to follow if employees are overexposed to hazardous chemicals
- How to read labels and SDSs to obtain hazard information
- Location of the SDS file and written hazard communication program

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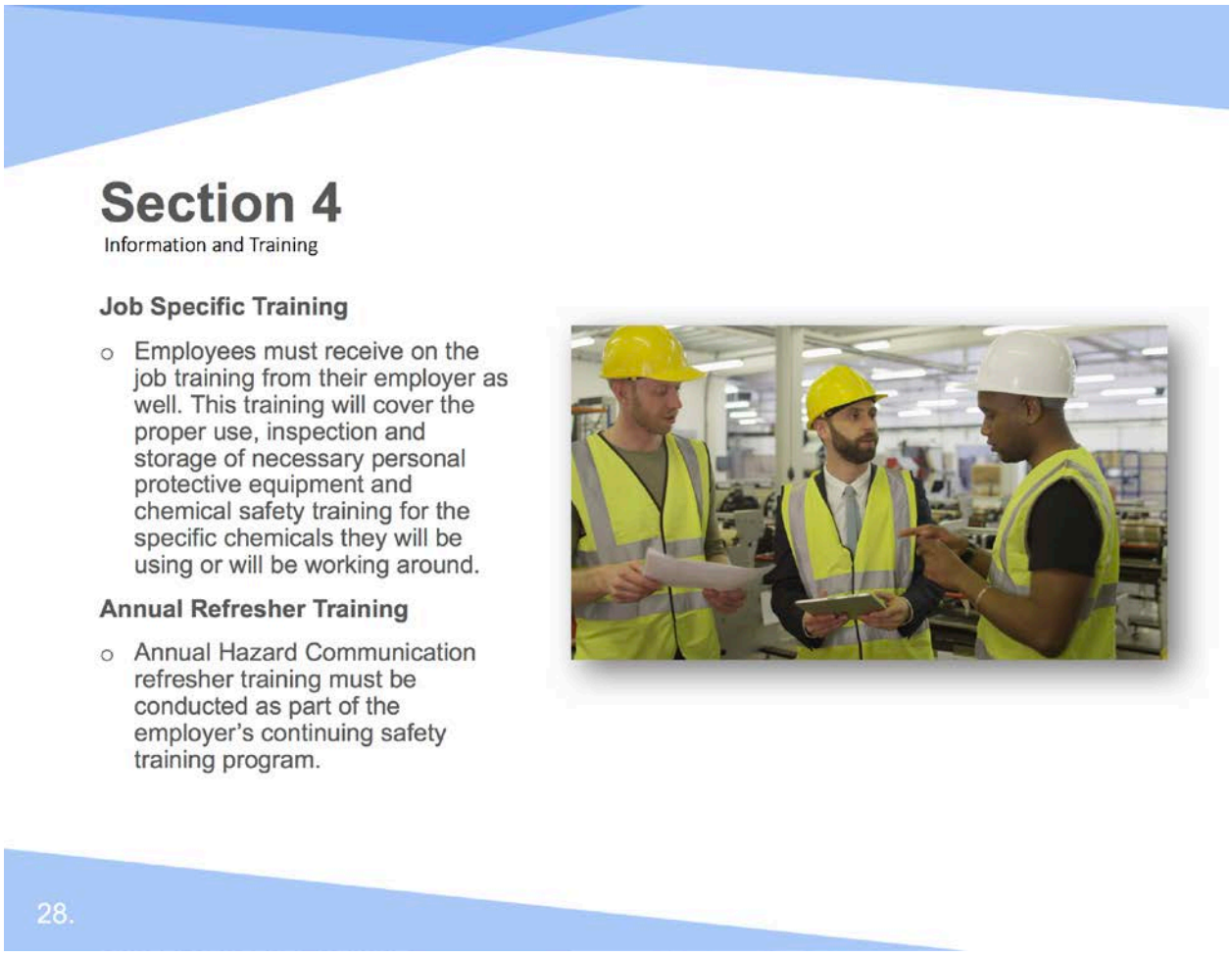

Facilitation Guidance:

Job Specific Training
Employees must receive on the job training from their employer as well. This training will cover the proper use, inspection and storage of necessary personal protective equipment and chemical safety training for the specific chemicals they will be using or will be working around.

Annual Refresher Training
Annual Hazard Communication refresher training must be conducted as part of the employer's continuing safety training program.

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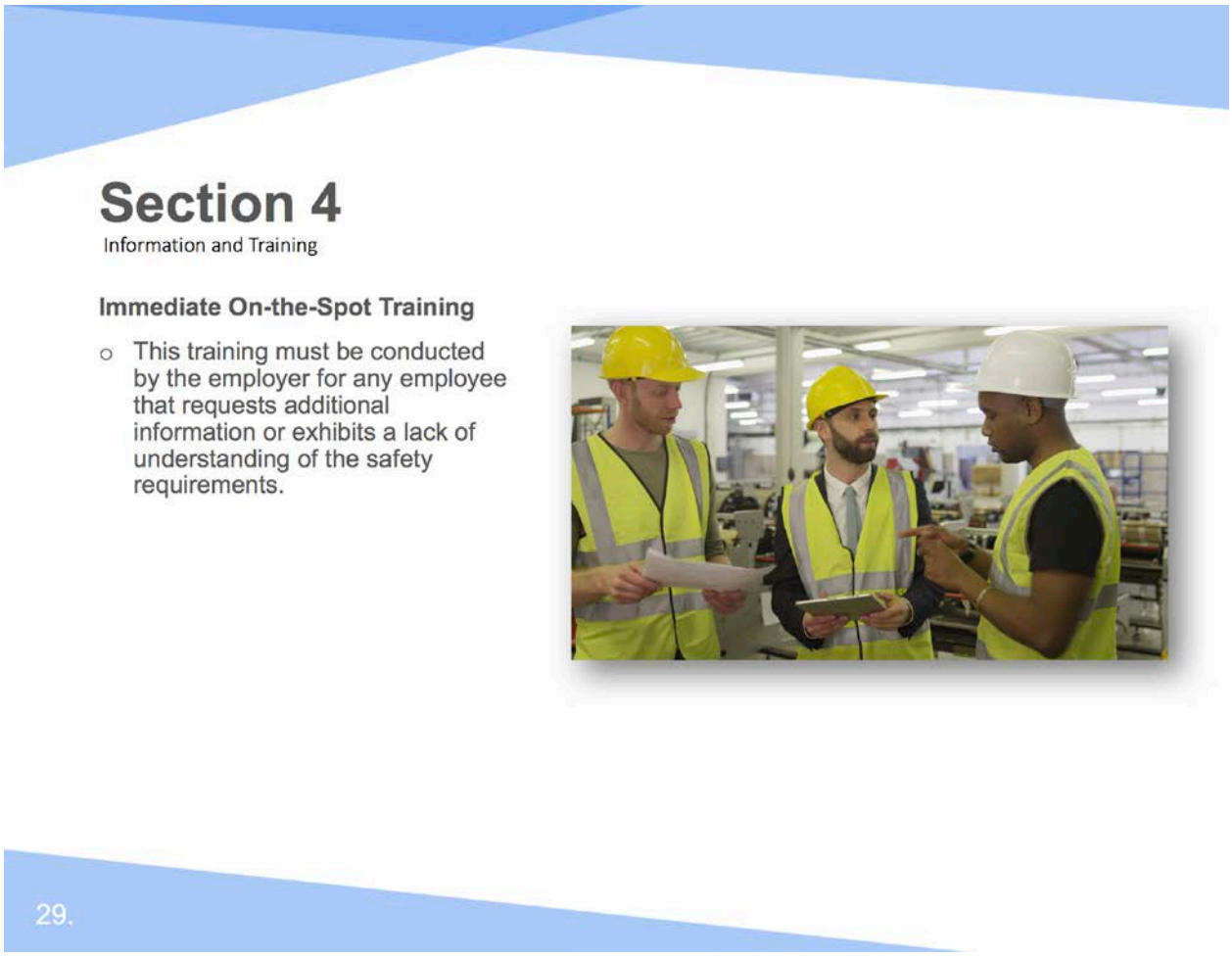

Facilitation Guidance:

Immediate On-the-Spot Training

This training must be conducted by the employer for any employee that requests additional information or exhibits a lack of understanding of the safety requirements.

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Section 4

Information and Training

Employees have the following rights under the Hazard Communication Program:

- To receive information regarding hazardous substances to which you may be exposed. For your physician or collective bargaining representative to receive information regarding hazardous substances to which you may be exposed.
- Access your medical and exposure monitoring records.
- Against discharge or other discrimination due to exercising their right to know.

30.

Facilitation Guidance:

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- Against discharge or other discrimination due to exercising their right to know.

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Facilitation Guidance:

Written Hazard Communication Program – 1910.1200 (e)
Employers must develop, implement, and maintain at the workplace a written hazard communication program for their workplaces.

Written Hazard Communication Program must include the following:

- A list of the hazardous chemicals known to be present.
- The methods the employer will use to inform workers about labels and Safety Data Sheets.
- The methods the employer will use to inform employees of the hazards of non-routine tasks.
- Methods the employer will use to provide the other employers on-site access to Safety Data Sheets on multi-employer sites.

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Facilitation Guidance:

Multi-Employer Sites

Employers who produce, use or store hazardous chemicals at multi-employer workplaces must additionally ensure that their hazard communication program includes the methods used to provide other employers with a copy of the Safety Data Sheet for hazardous chemicals other employer's employees may be exposed to while working.

The methods used to inform other employers of any precautionary measures for the protection of employees; and the methods used to inform the other employers of the labeling system used in the workplace.

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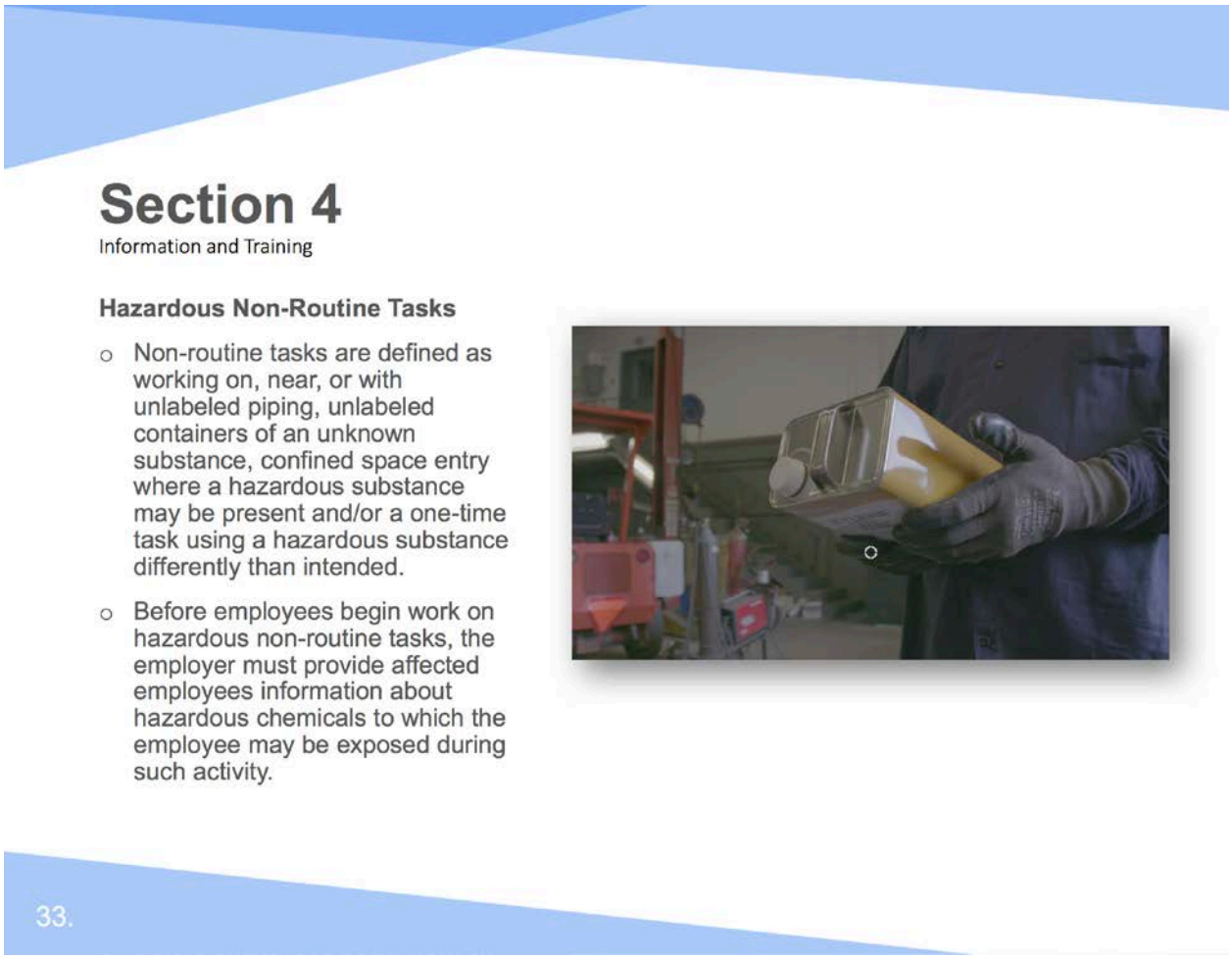

Facilitation Guidance:

Hazardous Non-Routine Tasks

Non-routine tasks are defined as working on, near, or with unlabeled piping, unlabeled containers of an unknown substance, confined space entry where a hazardous substance may be present and/or a one-time task using a hazardous substance differently than intended. Before employees begin work on hazardous non-routine tasks, the employer must provide affected employees information about hazardous chemicals to which the employee may be exposed during such activity.

This information will include the following:

- Specific chemical hazards;
- Protective / safety measures employees can take; and
- Measures the employer has taken to reduce the hazards including ventilation, respirators, the presence of another employee (buddy system), and emergency procedures.

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Facilitation Guidance:

General Safety Measures

Assume all chemicals are hazardous. The number of hazardous chemicals and the number of reactions between them is so large that prior knowledge of all potential hazards cannot be assumed. Use chemicals in as small quantities as possible to minimize exposure and reduce possible harmful effects.

The following general safety rules must be observed when working with chemicals:

- Read and understand the Safety Data Sheets.
- Keep the work area clean and orderly.
- Use the necessary safety equipment.
- Carefully label every container with the identity of its content, appropriate hazard warnings, and pictograms.
- Store incompatible chemicals in separate areas.

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Section 5

Control Measures

- Substitute less toxic materials whenever possible.
- Limit the volume of volatile or flammable material to the minimum needed for short operation periods.
- Provide means of containing the material if equipment or containers should break or spill their contents.

35.

Facilitation Guidance:

- Substitute less toxic materials whenever possible.
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Section 5

Control Measures

Task Evaluation

- Each task that requires the use of chemicals should be evaluated to determine the potential hazards associated with the work. This hazard evaluation must include the chemical or combination of chemicals that will be used in the work, as well as other materials that will be used near the work.

36.

Facilitation Guidance:

Task Evaluation
Each task that requires the use of chemicals should be evaluated to determine the potential hazards associated with the work. This hazard evaluation must include the chemical or combination of chemicals that will be used in the work, as well as other materials that will be used near the work.

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Section 5

Control Measures

Use either distance or barriers to isolate chemicals into the following groups:

- Flammable liquids: store in approved flammable storage cabinets.
- Do not store more than the cabinet limit.
- Acids: treat as flammable liquids
- Bases: do not store bases with acids or any other materials

37.

Facilitation Guidance:

The separation of chemicals (solids or liquids) during storage is necessary to reduce the possibility of unwanted chemical reactions caused by accidental mixing. Use either distance or barriers to isolate chemicals into the following groups:

- Flammable liquids: store in approved flammable storage cabinets.
- Do not store more than the cabinet limit.
- Acids: treat as flammable liquids
- Bases: do not store bases with acids or any other materials

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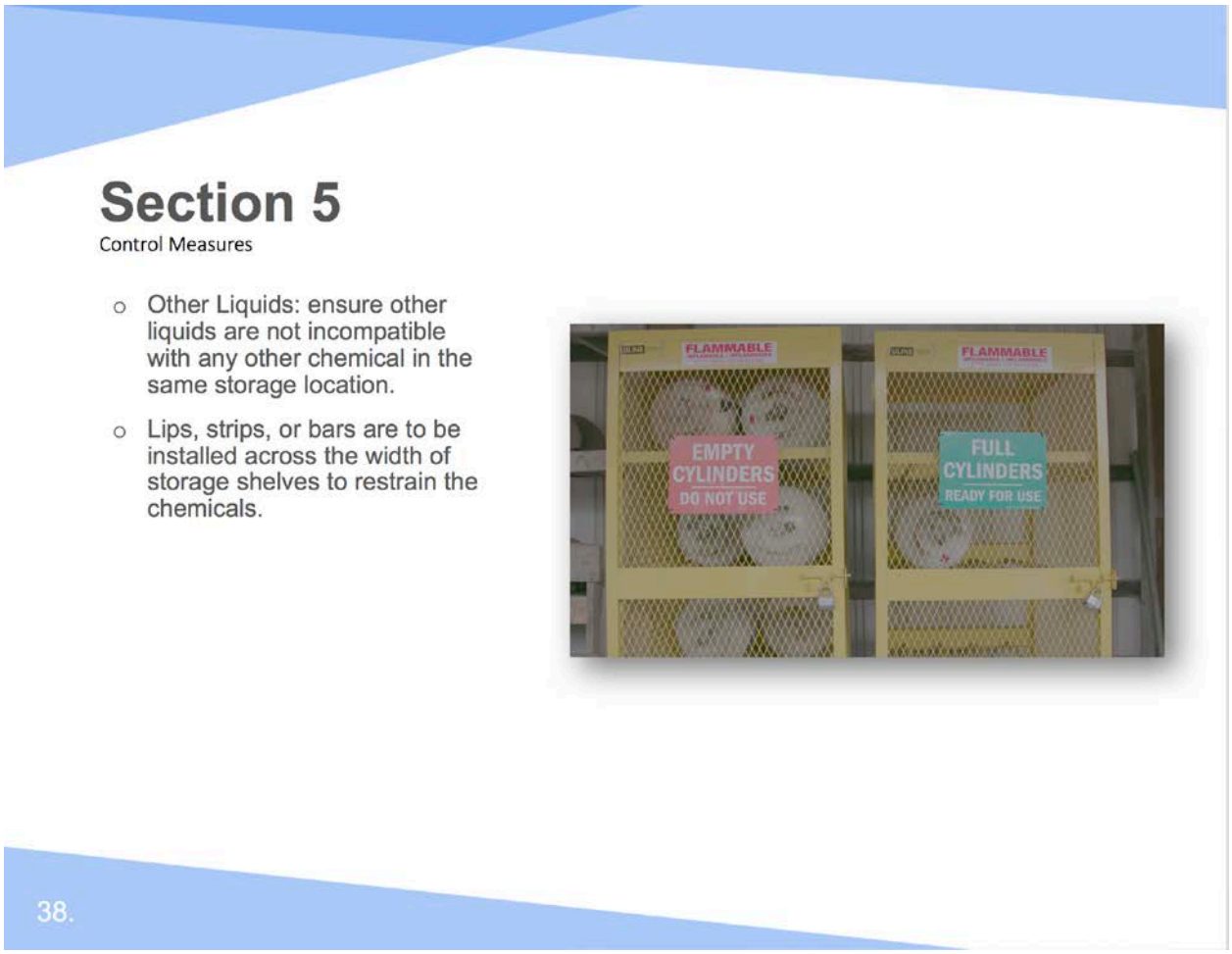

Facilitation Guidance:

Other Liquids: ensure other liquids are not incompatible with any other chemical in the same storage location.

Lips, strips, or bars are to be installed across the width of storage shelves to restrain the chemicals in case of earthquake.

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Facilitation Guidance:

Routes of Entry
The way chemicals get into body is called Routes of Entry. These include inhalation (breathing), ingestion (swallowing), and absorption through the skin or eyes.

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Section 5

Control Measures

There are safety measures we can take to prevent chemicals from entering our bodies.

- Proper ventilation or respirators can reduce inhalation.
- Keep food and beverages out of a work area and make sure we wash our hands before eating can prevent ingestion.
- Always wear the proper protective equipment specified by the container label or Safety Data Sheet.

40.

Facilitation Guidance:

There are safety measures we can take to prevent chemicals from entering our bodies. Proper ventilation or respirators can reduce inhalation.

Keep food and beverages out of a work area and make sure we wash our hands before eating can prevent ingestion.

Always wear the proper protective equipment specified by the container label or Safety Data Sheet.

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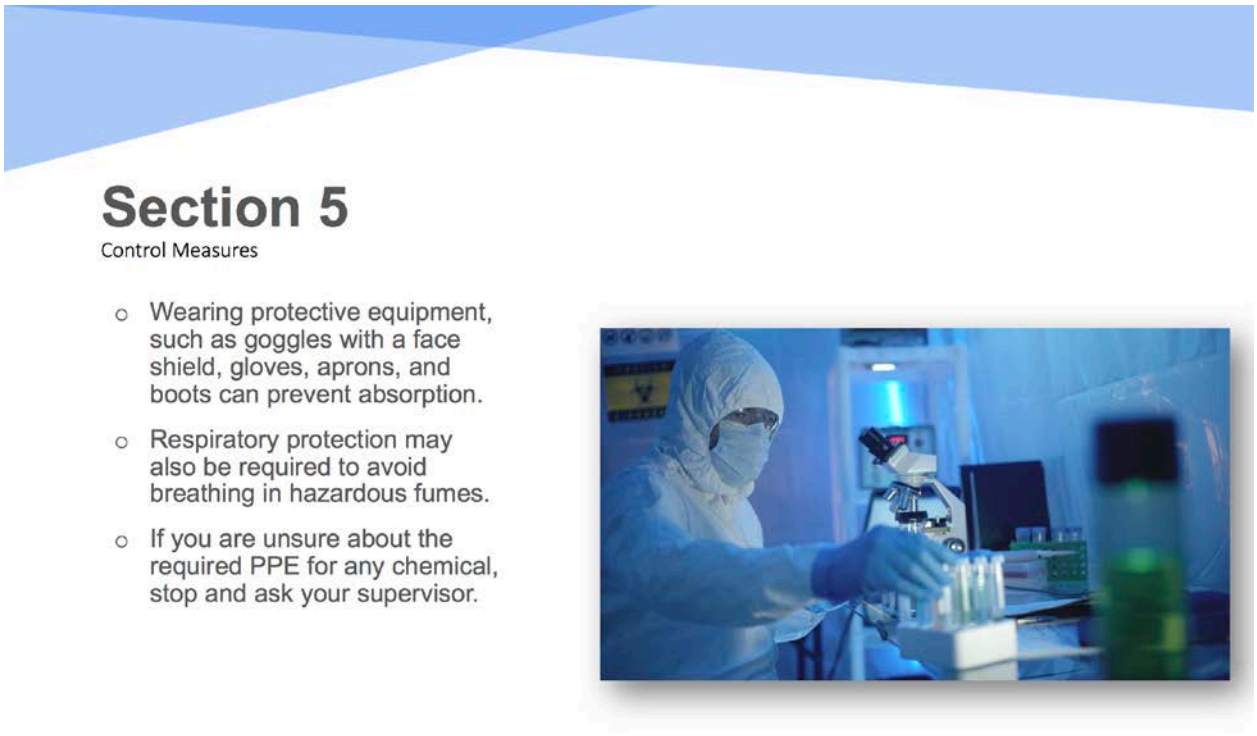

Facilitation Guidance:

Wearing protective equipment, such as goggles with a face shield, gloves, aprons, and boots to prevent absorption.

Respiratory protection may also be required to avoid breathing in hazardous fumes.

If you are unsure about the required PPE for any chemical, stop and ask your supervisor.

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Section 5

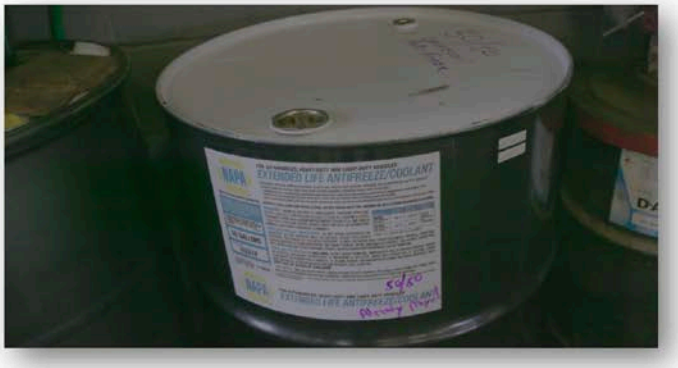
Control Measures

Spill Response and Cleanup

- You should always have a spill response plan in place prior to working with hazardous chemicals.

However, you should NOT attempt to clean up a spill if:

- If the spilled material is unknown or highly toxic.
- You lack the knowledge or necessary equipment to do the cleanup safely.
- The spill is large and cannot be contained with a small spill kit.
- You are experiencing symptoms of exposure.



42.

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- You are experiencing symptoms of exposure.

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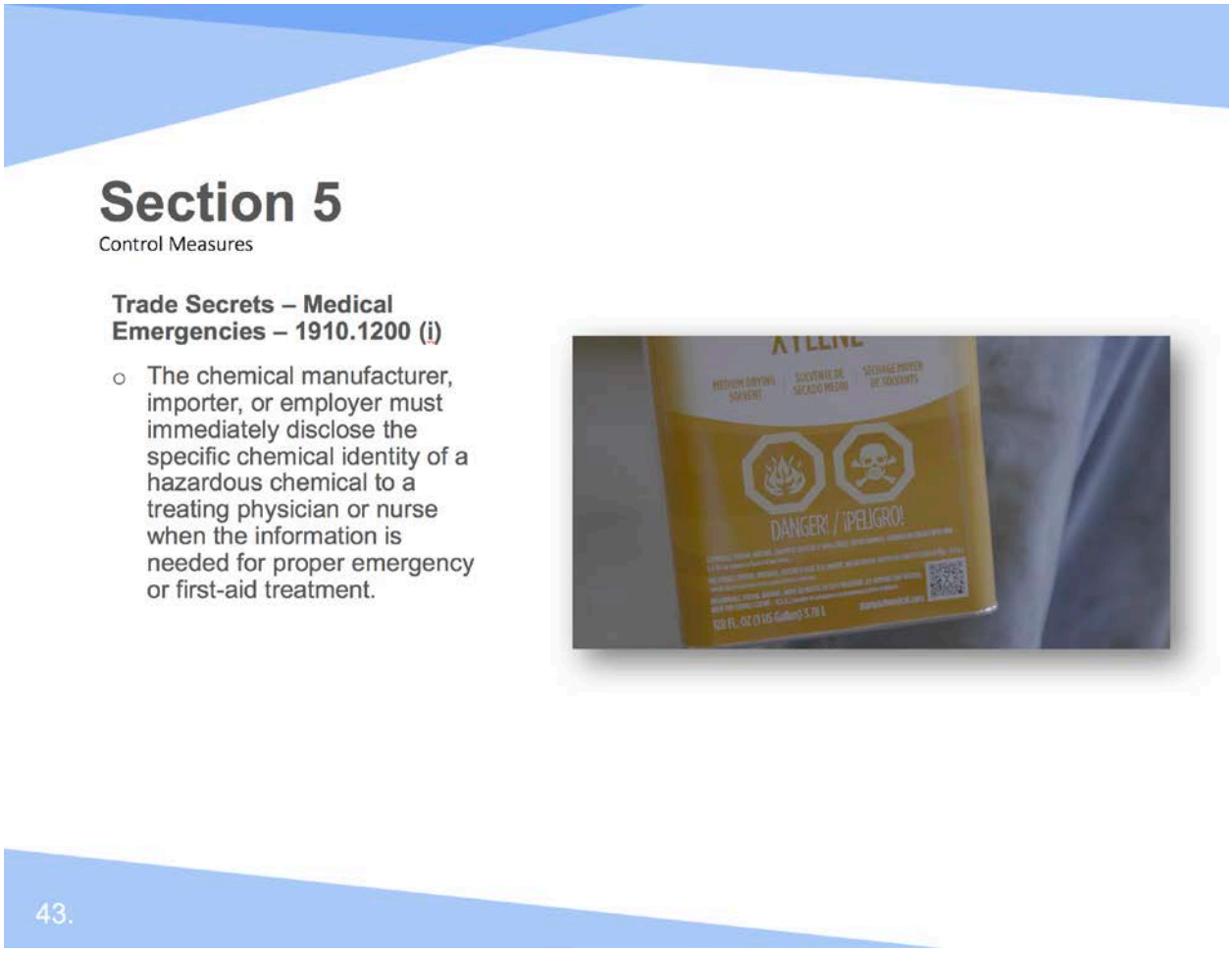


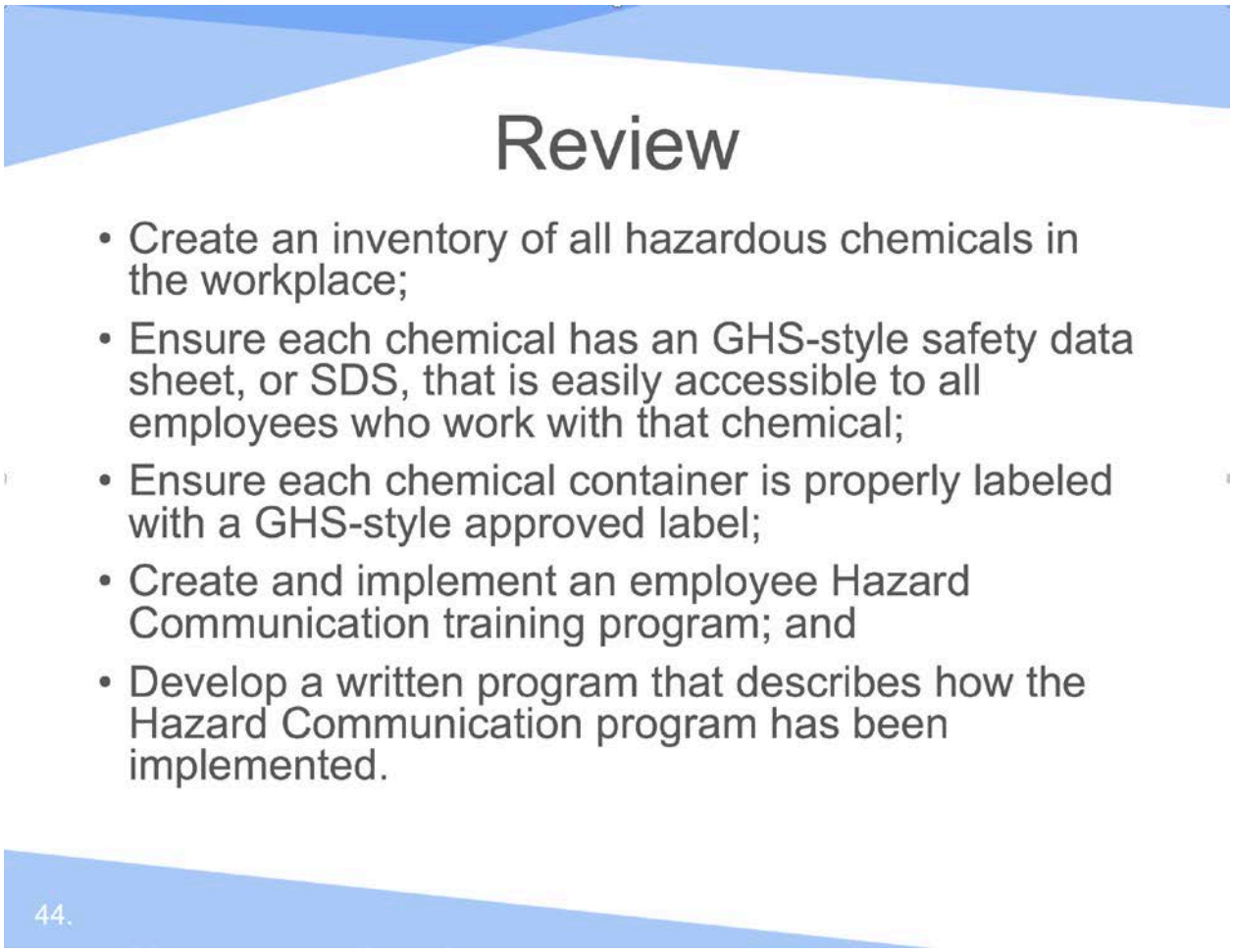
Facilitation Guidance:

Trade Secrets – Medical Emergencies – 1910.1200 (i)

The chemical manufacturer, importer, or employer must immediately disclose the specific chemical identity of a hazardous chemical to a treating physician or nurse when the information is needed for proper emergency or first-aid treatment.

Course Review

Slide 44



Facilitation Guidance:

Here are 5 key points to must remember about OSHA's Hazard Communication Standard:

- Create an inventory of all hazardous chemicals in the workplace;
- Ensure each chemical has an GHS-style safety data sheet, or SDS, that is easily accessible to all employees who work with that chemical;
- Ensure each chemical container is properly labeled with a GHS-style approved label;
- Create and implement an employee Hazard Communication training program; and
- Develop a written program that describes how the Hazard Communication program has been implemented.

Supplemental Resources