Speaker's Notes

- Today's training is on hazard communication and how it has been brought into alignment with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). It is required training as part of the Hazard Communication standard (29 CFR 1910.1200).
- You will learn:
  - How to evaluate and understand the chemicals found in the workplace
  - How to protect yourself from chemical-related injuries and hazards, and
  - Changes made to hazard communication as a result of the GHS.

Suggestion for the Speaker

Begin discussion by asking trainees what chemicals they use or encounter at home and on the job.

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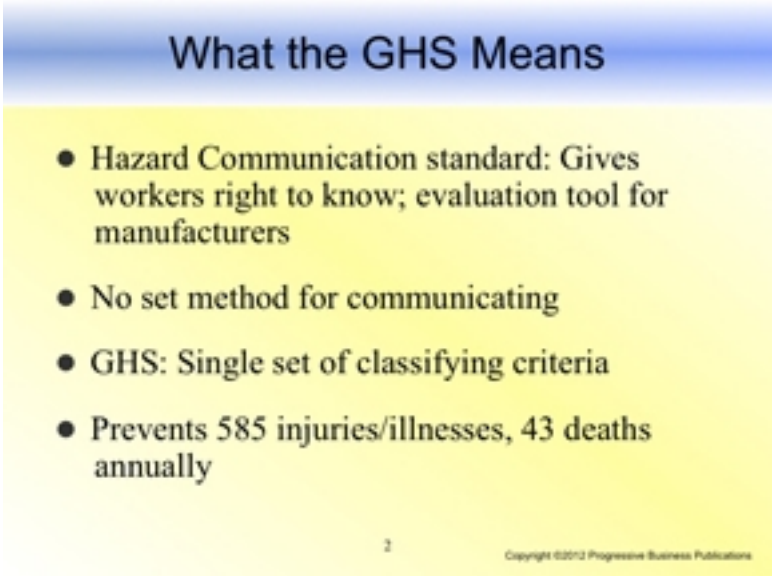

Speaker's Notes

- The original Hazard Communication (Hazcom) standard was developed in 1983 to give workers the right to know about the chemicals they handle, and provide manufacturers and importers the ability to evaluate the hazards of the chemicals they make or import.
- However, the old standard gave them the right to communicate those hazards any way they wanted. The Globally Harmonized System provides a single set of criteria for classifying chemicals that will improve quality and consistency of hazard information, while also saving $32 million companies spend on regularly updating data sheets and labels.
- Ultimately, the changes will improve workplace safety by preventing about 585 workplace injuries and illnesses and 43 fatalities annually.

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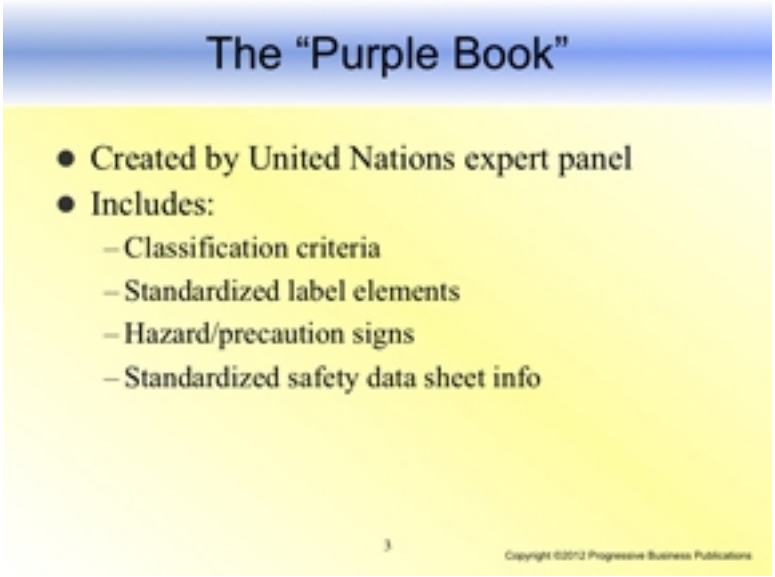

Speaker's Notes

- The Globally Harmonized System is the result of a multi-year negotiation by hazcom experts from many different countries, international organizations and stakeholder groups, based on existing systems (including OSHA's hazcom standard).
- These negotiations produced the GHS document – commonly called the Purple Book because of its cover – which provides:
  - Classification criteria for health, physical and environmental chemical hazards
  - Standardized label elements assigned to hazard classes and categories
  - Signal words, pictograms and hazard and precautionary information to convey hazards to users, and
  - Standardized order of information for Safety Data Sheets.

Suggestion for the Speaker

Show trainees a copy of the GHS book. Copies are available at *http://www.osha.gov/dsg/hazcom/ghs.html*

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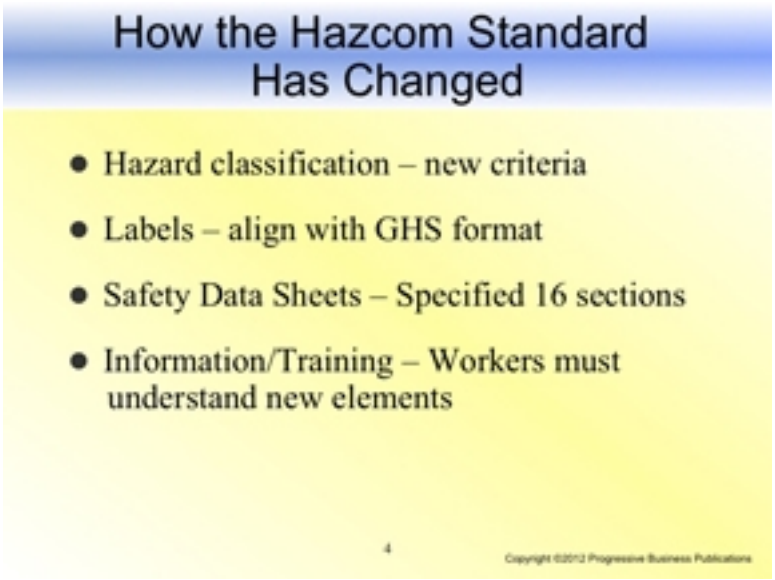

Speaker's Notes

- There are four major changes to the OSHA hazcom standard brought on by the GHS:
  - Hazard classification – It provides more specific criteria for classification of health and physical hazards, and classifies mixtures
  - Labels – Manufacturers and importers must provide a label that includes GHS-standard signal words, pictograms and hazard statements
  - Safety Data Sheets – Formerly Material Safety Data Sheets (MSDS), the SDS will now have a specified 16-section format, and
  - Information and training – This is what brings us here today. Workers must be able to recognize and understand the new label elements and SDS format.

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Speaker's Notes

- Every chemical container in the workplace must be labeled to alert workers to potential hazards and handling requirements. These labels must be updated within six months when new information about the chemical is announced.
- If the container is missing a label, don't open it – report it to a supervisor right away.
- Under the GHS, each label must include these elements:
  - Product identifier (code number and chemical name)
  - Supplier identification
  - Precautionary statements – phrases that describe recommended safety measures to minimize or prevent exposure or injury (ex: "Wear protective gloves")
  - Hazard statement – a statement assigned to each hazard class and category that describes the chemical's dangers
  - Signal words – indicating the level of severity of the hazard, either "danger" (for more severe levels) or "warning" (for less severe levels), and
  - Pictograms – a symbol or symbols that illustrate the chemical's hazards.

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Speaker's Notes

- There are nine pictograms the GHS uses to convey health, physical and environmental hazards. They're required to be on a white background, framed by a red border.
- The Health Hazard pictogram alerts workers to:
  - Carcinogenic potential
  - Mutagenicity
  - Reproductive toxicity
  - Respiratory sensitizer
  - Target organ toxicity (danger to specific organs), and
  - Aspiration toxicity.

Suggestion for the Speaker

Provide each trainee with a copy of the pictogram alerts, available at *www.osha.gov/Publications/HazComm_QuickCard_Pictogram.html*

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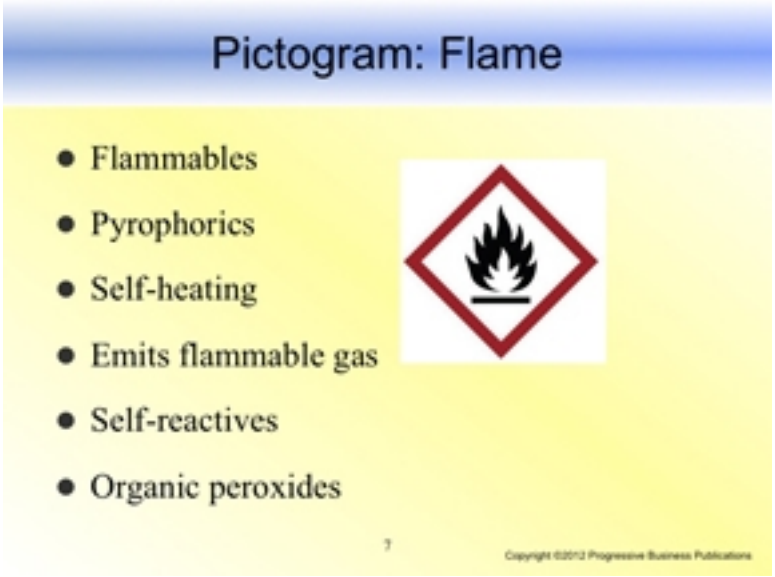

Speaker's Notes

- The flame pictogram alerts workers to these hazards:
  - Flammables
  - Pyrophorics (ignite in open air)
  - Self-heating
  - Emits flammable gas
  - Self-reactives (materials that don't need oxygen to ignite), and
  - Organic peroxides (explosive ingredients).

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Speaker's Notes

- The Exclamation Mark pictogram alerts workers to these hazards:
  - Irritant
  - Skin sensitizer (a substance that will induce an allergic response following skin contact)
  - Acute toxicity (when adverse effects occur within 14 days of exposure to a substance)
  - Narcotic effects
  - Respiratory tract irritant, and
  - Hazardous to ozone layer.

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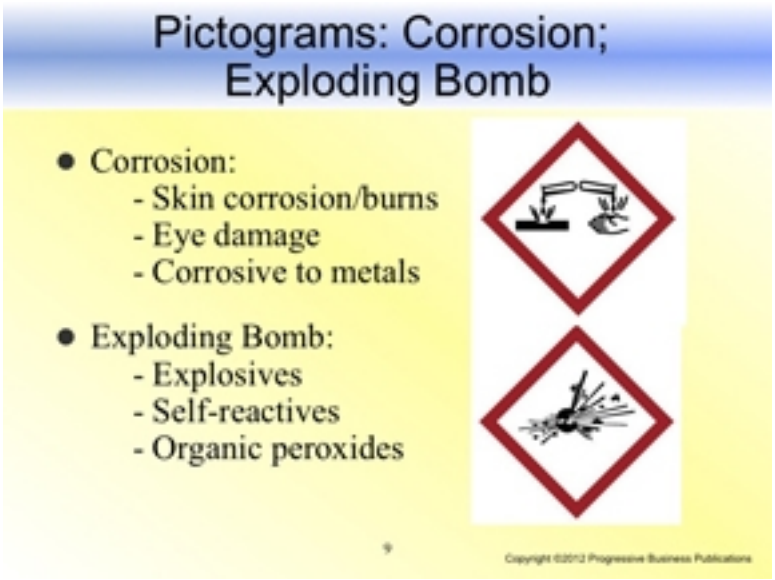

Speaker's Notes

- Corrosion hazards are:
  - Skin corrosion/burns
  - Eye damage, and
  - Corrosive to metals.
- Exploding Bomb's hazards are:
  - Explosives
  - Self-reactives, and
  - Organic peroxides.

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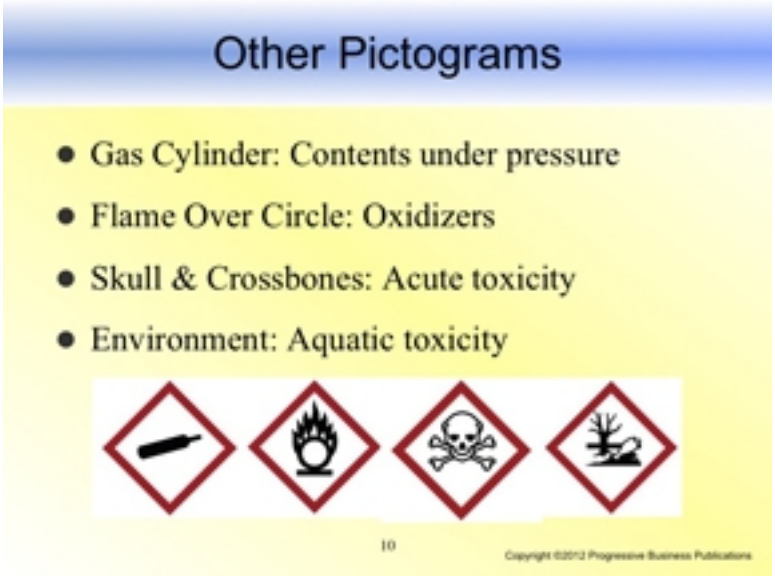

Speaker's Notes

The remaining pictograms represent only one specific hazard.

- The Gas Cylinder warns that gases are under pressure
- The Flame Over Circle warns of oxidizers (which contribute to the combustion of other material)
- The Skull and Crossbones warns of Acute Toxicity (fatal or toxic), and
- The Environment warns of aquatic toxicity (this pictogram is not required by OSHA since it isn't within OSHA's jurisdiction).

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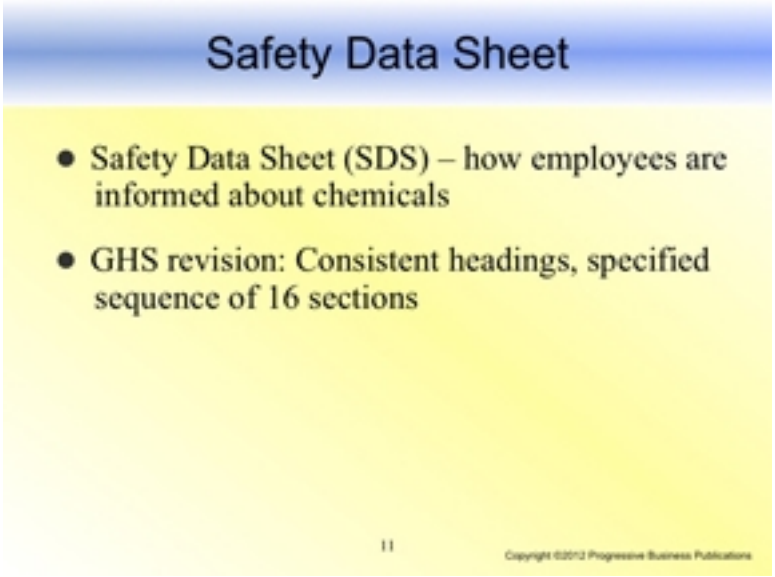


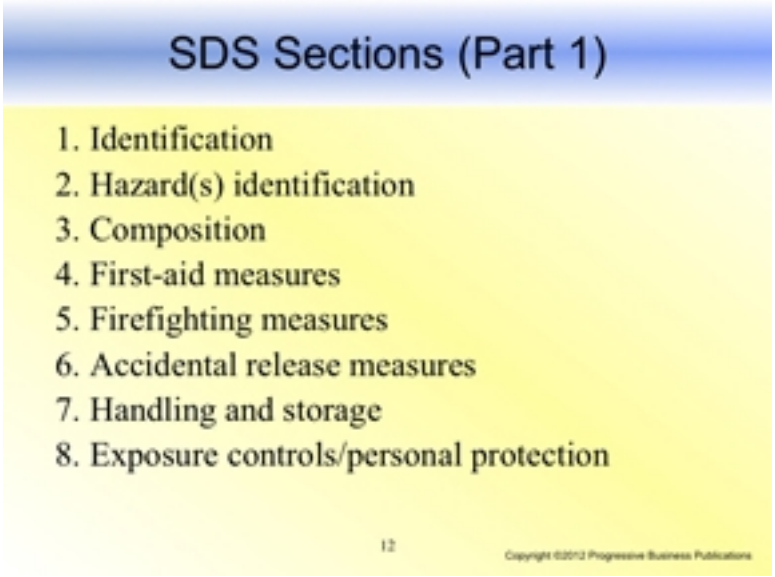
Speaker's Notes

- The other major way employees learn about the chemicals they work with is the Safety Data Sheet, or SDS (this has been simplified from Material Safety Data Sheet to align with the international terminology).

The GHS revision requires that data be presented using consistent headings in a specified sequence, and that it include the following 16 sections.

Suggestion for the Speaker

Provide a sample SDS for a chemical found in your workplace.



Speaker's Notes

- Section 1, **Identification,** includes the product identifier, the manufacturer or distributor name, address and phone number, an emergency phone number, recommended use and restrictions on use.
- Section 2, **Hazard identification,** includes all hazards regarding the chemical, and required label elements.
- Section 3, **Composition/information on ingredients,** includes information on chemical ingredients and any trade secret claims.
- Section 4, **First-aid measures,** includes important symptoms and effects, both acute and delayed, and the required treatment.
- Section 5, **Firefighting measures,** lists suitable extinguishing techniques and equipment, as well as chemical hazards from fire.
- Section 6, **Accidental release measures,** lists emergency procedures, protective equipment and proper methods of containment and cleanup.
- Section 7, **Handling and storage,** lists precautions for safe handling and storage, including incompatibilities.
- Section 8, **Exposure controls/personal protection,** lists OSHA's Permissible Exposure Limits (PELs), Threshold Limit Values (TLVs) and personal protective equipment (PPE).

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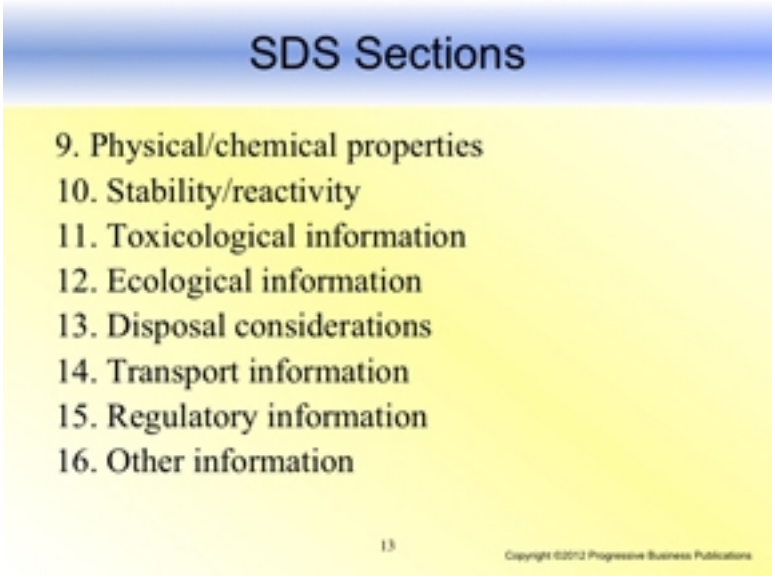

Speaker's Notes

- Section 9, **Physical and chemical properties,** lists the chemical characteristics.
- Section 10, **Stability and reactivity,** lists chemical stability and possibility of hazardous reactions.
- Section 11, **Toxicological information,** includes routes of exposure, related symptoms and effects and numerical measures of toxicity.

The following four sections are not enforced by OSHA, since other agencies regulate the information:

- Section 12, **Ecological information**.
- Section 13, **Disposal considerations**.
- Section 14, **Transport information**.
- Section 15, **Regulatory information**.
- Section 16, **Other information**. This may include the date of preparation or the last revision.

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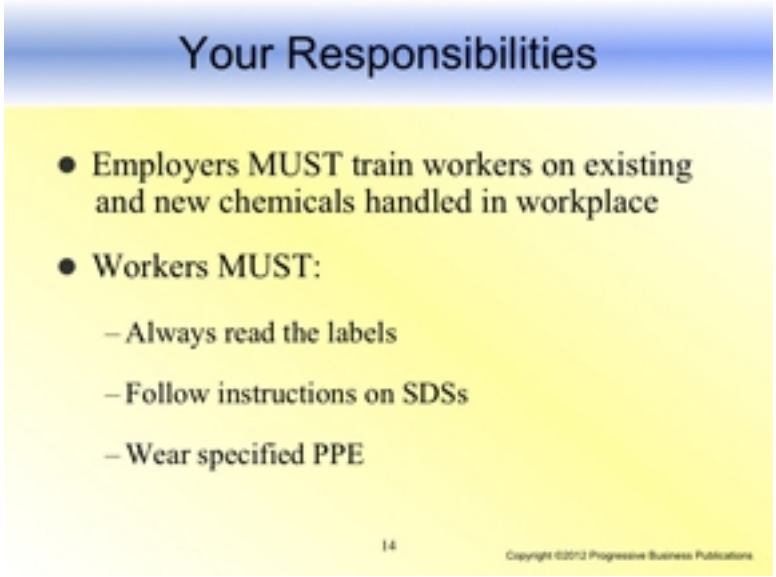

Speaker's Notes

- All employers are required to train their workers on each chemical they will work with, and inform them any time a new chemical is introduced to the workplace.
- As employees, it's your responsibility to follow your training. To stay safe:
  - Always read the labels and Safety Data Sheets provided on the chemicals you work with, and
  - Take the required safety measures, including wearing the specified personal protective equipment (PPE).

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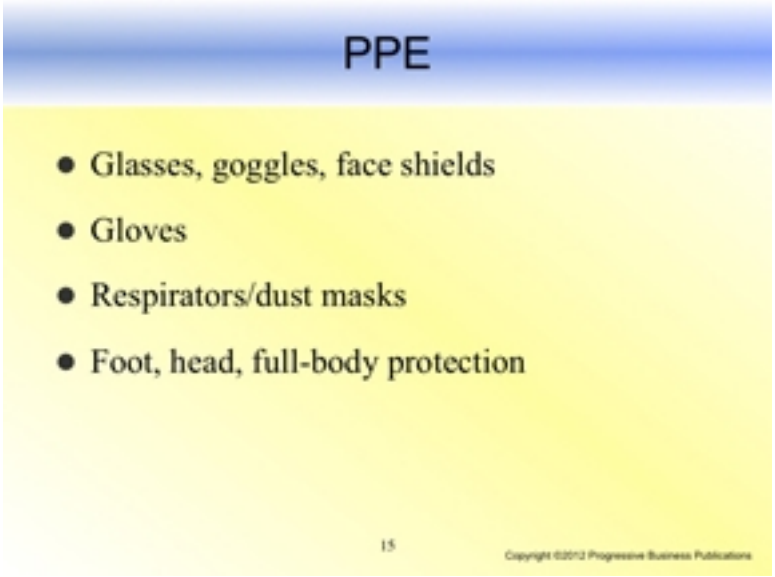

Speaker's Notes

- The PPE listed on the SDS vary depending on the chemical properties and hazards. All PPE must be maintained and regularly inspected to ensure that it fits properly and is in good working condition.
- You may be required to wear:
  - Glasses, goggles and face shields for protection from splashes, sprays and mists
  - Gloves to protect you from chemical hazards when handling them
  - Respirators and dust masks when working in areas where hazardous vapors, fumes and dust are present, and/or
  - Foot, head and full-body protection (hazmat suits) to guard the skin against contamination from corrosive materials.

Suggestion for the Speaker

Provide examples of each piece of PPE workers are required to wear in your workplace.

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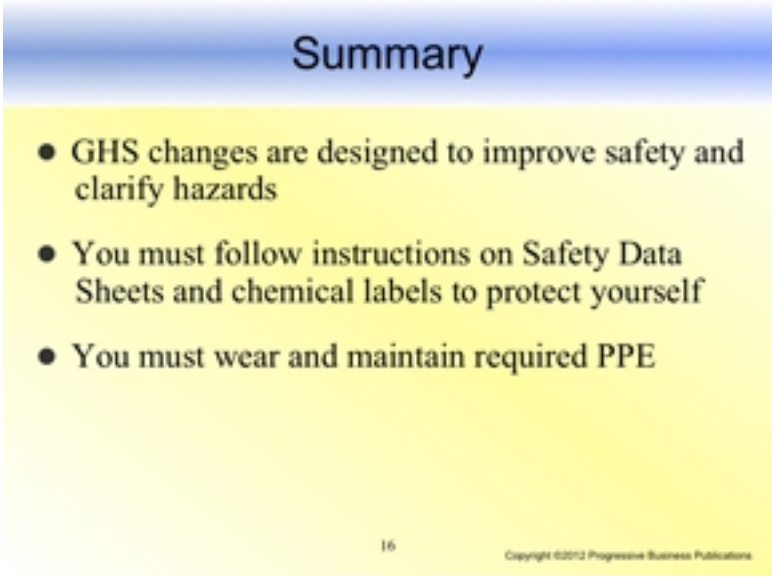

Speaker's Notes

- By updating the Hazard Communication Standard to adopt the Globally Harmonized System, U.S. workplaces can improve their safety by better communicating chemical hazards to the workers who handle them.
- For the GHS to work the way it's intended, workers have to do their part by paying attention to the indications and warnings found on each SDS and chemical label, and by wearing the specified PPE, with no exceptions.

Suggestion for the Speaker

Open the floor to further discussion. When discussion has ended, test trainees with the included quiz.

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