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Training Employees on the new OSHA GHS Standard Revisions



OSHA Compliance Deadline: December 1, 2013



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Program Objectives

- Today:
 - Why GHS and HAZCOM are important
 - Effective Dates
 - New Label Format
 - Material Safety Data Sheets (MSDS's) will become Safety Data Sheets (SDS's)
 - SDS's will serve the same purpose as MSDS's, but will be in a uniform format and easier to read
 - This training will give you a step-by-step tutorial on how to train your employees



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Why is the Hazard Communication standard important?

- 32 million workers are potentially exposed to chemicals
- Roughly one-quarter of workplace diseases and injuries are caused by chemicals
- Hazcom was the second most cited standard in FY 2012
 - 4,696 citations (16% of all citations)
 - Source: Safety + Health December 2012
- What is the First??



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Why was GHS created?

From global inconsistency...





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Why was GHS created?

To Globally Harmonized





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What are the five key elements in the OSHA Hazcom standard?

1. Employers must have a written Hazcom Program
2. Containers must be labeled and labels must follow a consistent format
3. Safety Data Sheets (SDSs) must be available for hazardous substances in the workplace or jobsite
 - A. What does “available” mean?
4. Workers must be trained
5. Employers must have an updated chemical inventory



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OSHA revised its standard to be part of the Global Harmonization System (GHS), effective May 25, 2012

- World-wide standardized hazard communication
- Consistent hazard classifications
- 16-section safety data sheets (SDS)
- Standard labeling



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Effective dates you need to be aware of:

Effective Completion Date	Requirements	Who
December 1, 2013	Train employees on the <u>new label elements</u> and <u>safety data sheet (SDS)</u> format.	Employers
June 1, 2015* December 1, 2015	Compliance with all modified provisions of this final rule, except: The Distributor shall not ship containers labeled by the chemical manufacturer or importer unless it is a GHS label	Chemical manufacturers, importers, distributors and employers
June 1, 2016	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.	Employers



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One of the two signal words is required on labels to emphasize hazard. Which communicates greater hazard?

Danger or Warning?



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New Label Format

Labels on hazardous chemicals will include:

- Precautionary statements: What should you do to protect yourself from the hazard? How to store product, fire prev., ventilation, static electricity...
- Signal words: “Warning” (less serious risk) or “Danger” (more serious risk)
- Hazard statements: What is the hazard? Nature of hazard (explosive, corrosive, etc.) or degree of hazard (relative severity), target organ(s).
- Pictograms: Visually identify the main hazards.
- Supplier identification of manufacturer, importer or other responsible party.
- Product Identifier: How the hazardous chemical is identified-chemical name



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- Pay attention to the **Signal Word** on the new labels!
 - The Signal Word (“Warning” or “Danger”) is determined by the level of risk for each chemical on each hazard.
 - For example, if a chemical is labeled as a ‘Health Hazard’ and the hazard statement indicates that it is a *carcinogen*...
 - “**Warning**” means the substance “is suspected of causing cancer”
 - “**Danger**” means the substance “may cause cancer” (in other words, there is more scientific evidence that the chemical will cause an increased risk of cancer if used improperly)

Health Hazard



- **Carcinogen**
- **Mutagenicity**
- **Reproductive Toxicity**
- **Respiratory Sensitizer**
- **Target Organ Toxicity**
- **Aspiration Toxicity**



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OSHA now requires that labels contain these elements:

1. Signal words
2. Hazard statement
3. Hazard pictograms
4. Precautionary statements



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Additional information that must be included on labels

1. Product Identifier
2. Supplier Identification
3. Supplemental Information



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Labels must also contain standard Precautionary Statements to describe how to prevent harm

Here are some examples:

- “Only use non-sparking tools”
- “Store in a cool, well ventilated and locked place”
- “Do not breathe vapors”
- “Wear protective gloves”



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SAMPLE LABEL

CODE _____
Product Name _____

**Product
Identifier**

Company Name _____
Street Address _____
City _____ State _____
Postal Code _____ Country _____
Emergency Phone Number _____

**Supplier
Identification**

Keep container tightly closed. Store in a cool, well-ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measures against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO₂) fire extinguisher to extinguish.

First Aid

If exposed call Poison Center.
If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.

**Precautionary
Statements**

Hazard Pictograms



**Signal Word
Danger**

Highly flammable liquid and vapor.
May cause liver and kidney damage.

**Hazard
Statements**

Supplemental Information

Directions for Use

Fill weight: _____ Lot Number: _____
Gross weight: _____ Fill Date: _____
Expiration Date: _____



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- The Label elements work together with the SDS elements
- The SDS further explains in more detail all elements on the label.
 - Specifics of the chemical
 - Specific First Aid measures
 - Exposure limits
 - Fire Fighting Measures
 - Handling and Storage
 - Etc.



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OLD (ANSI)

Methyl Ethyl Ketone
2-butanone; ethyl methyl ketone; methylacetone;
2-oxobutane

DANGER! FLAMMABLE! IRRITANT

Emergency Overview:
Colorless, volatile liquid; sweet mint odor. Irritating to eyes/respiratory tract. Also causes: corneal injury; inhalation may cause dizziness or vomiting. Chronic: dry skin, dermatitis. Flammable. Can form explosive mixtures in air.

Precautionary Measures: Avoid exposure to skin. Wear protective clothing: Goggles, Gloves, Apron.

First Aid Procedures: Inhalation: Remove to fresh air and support breathing as needed. Eyes/Skin: Remove contaminated clothing. Flush with plenty of water for at least 15 minutes. Ingestion: Do not induce vomiting. Consult physician.

Fire Procedures: Flammable. Can form explosive mixtures in the air. Use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam. Use water to cool fire-exposed containers.

Spill Procedures: Notify safety personnel, isolate and ventilate area. Shut off heat and ignition sources. Absorb with inert material such as earth or vermiculite. Damp mop residue. Cleanup crew should protect against exposure.

CAS No. 78-93-3

NEW (GHS)

Methyl ethyl ketone (2-butanone)

DANGER

Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness.

PREVENTION
Keep away from heat, sparks, and open flames. — No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment, and non-sparking tools. Take precautionary measures against static discharge.
Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Wear eye protection.

RESPONSE
If on skin: Take off immediately all contaminated clothing. Rinse skin with water.
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide for extinction.

STORAGE
Store locked up, in a cool, well-ventilated place.

DISPOSAL
Dispose of contents to an EPA permitted incinerator.



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Corrosion



- Skin Corrosion/ Burns
- Eye Damage
- Corrosive to Metals

Health Hazard



- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

Exclamation Mark



- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone Layer (Non-Mandatory)

Flame



- Flammable
- Pyrophoric
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides

Gas Cylinder



- Gases Under Pressure

Environment

(Non-Mandatory)



- Aquatic Toxicity

Skull and Crossbones



- Acute Toxicity (fatal or toxic)

Flame Over Circle



- Oxidizers

Exploding Bomb



- Explosives
- Self-Reactives
- Organic Peroxides



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- Health Hazard chemicals pose a risk to your health if used improperly.

Health Hazard



- **Carcinogen**
- **Mutagenicity**
- **Reproductive Toxicity**
- **Respiratory Sensitizer**
- **Target Organ Toxicity**
- **Aspiration Toxicity**



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- The Skull and Crossbones pictogram will usually be used in combination with a Health Hazard pictogram to signify *particularly hazardous chemicals*.
 - Chemicals with Acute Toxicity (fatal or toxic) are chemicals that will produce adverse effects following a single dose of the substance.
 - These effects are more serious than the 'Acute Toxicity' (harmful) listed under the Exclamation Point pictogram (next slide).

Skull and Crossbones



- **Acute Toxicity
(fatal or toxic)**



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- The Exclamation Mark pictogram will usually be used in combination with a Health Hazard pictogram to signify particular health risks which are less severe than the Skull and Crossbones category.

Exclamation Mark



- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone Layer (Non-Mandatory)



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- The Flame pictogram indicates there is a fire risk, and you should be especially concerned about ignition sources and combustible materials.

Flame



- **Flammables**
- **Pyrophorics**
- **Self-Heating**
- **Emits Flammable Gas**
- **Self-Reactives**
- **Organic Peroxides**



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- Chemicals labeled with a Flame Over Circle can create an increased fire risk in your work or storage environment.
 - Oxidizers are chemicals that produce additional oxygen in an environment, which may cause or contribute to the combustion of other materials.

Flame Over Circle



- Oxidizers



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- The Corrosion label should prompt you to be especially aware of PPE and storage requirements.

Corrosion



- **Skin Corrosion/
Burns**
- **Eye Damage**
- **Corrosive to Metals**



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- Chemicals marked with an Exploding Bomb pose a significant physical risk and should be treated with extreme caution.

Exploding Bomb



- **Explosives**
- **Self-Reactives**
- **Organic Peroxides**



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- The Gas Cylinder pictogram alerts you to physical hazards inherent in the use and storage of compressed gas.

Gas Cylinder



• **Gases Under Pressure**



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- The Environment pictogram is a “non-mandatory” category for safety training because it is regulated by other agencies but is included here for your information.

**Environment
(Non-Mandatory)**



• **Aquatic Toxicity**



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Safety Data Sheets- SDS's

Refer to the Naphtha SDS

- **Section 1**, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.
- **Section 2**, Hazard(s) identification includes all hazards regarding the chemical; required label elements.
- **Section 3**, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.
- **Section 4**, First-aid measures includes important symptoms/effects, acute, delayed; required treatment.
- **Section 5**, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.



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Safety Data Sheets- SDS's

- **Section 6**, Accidental release measures lists emergency procedures; protective equipment; 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); appropriate engineering controls; personal protective equipment (PPE).
- **Section 9**, Physical and chemical properties lists the chemical's characteristics.
- **Section 10**, Stability and reactivity lists chemical stability and possibility of hazardous reactions.



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Safety Data Sheets- SDS's

- **Section 11**, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.
- **Section 12**, Ecological information provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment.
- **Section 13**, Disposal considerations provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices.
- **Section 14**, Transport information provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea.



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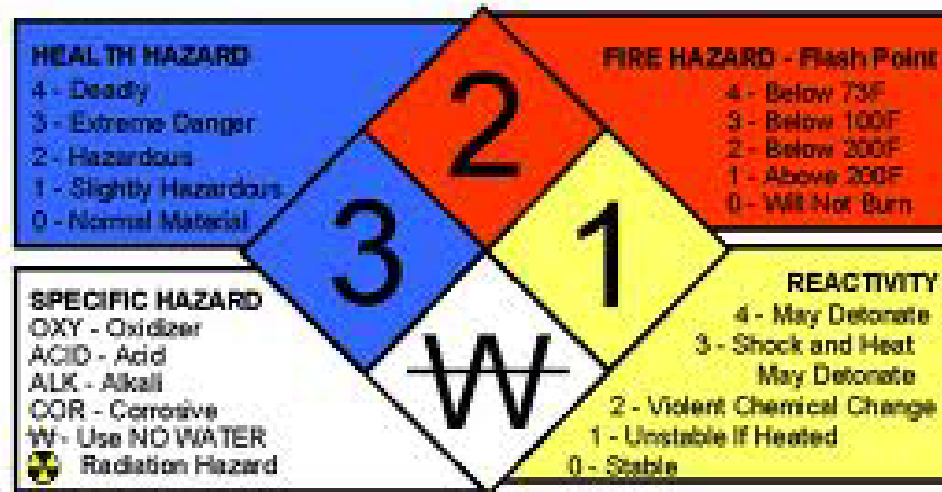
Safety Data Sheets- SDS's

- **Section 15**, Regulatory information identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS.
- **Section 16**, Other information, includes the date of preparation or last revision.



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Remember this? (Old)



1 is the new 4....

Significant: With GHS, the lower the categorization number, the greater the severity of the hazard, and the number 0 has been eliminated. This is opposite of the way numbers and severity relate to each other under NFPA and HMIS.



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“Naphtha” SDS QUIZ

1. What is the signal word for Naphtha? _____
2. In which section does it outline how to extinguish if this product catches fire? _____
3. Based on your review of this SDS, would you say that this product is more *flammable* or *corrosive*? _____
4. If your co-worker ingests this product, you should induce vomiting: T or F
5. According to this SDS, which section outlines the recommended type of eye protection? _____



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Label QUIZ

Circle all of the required elements of a label for hazardous chemicals

1. Pictograms
2. Signal word
3. Hazard and precautionary statements
4. Product identifier
5. Supplier identifier
6. Phone number of your local Fire Department
7. Location of the nearest hospital



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Pictograms Quiz



















- A. Acute Toxicity (may be fatal)
- B. Flammable, Emits Flammable Gas
- C. Oxidizer
- D. Explosive, Self-Reactive
- E. Environmental Toxicity
- F. Corrosive, Eye Damage
- G. Carcinogen, Target Organ Toxicity, Health Hazard
- H. Irritant, Narcotic Effects
- I. Gases Under Pressure
- J. Respiratory Sensitizer
- K. Pyrophorics



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Questions?

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