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Mark provides safety and human resource consulting to our clients. He assists clients with their OSHA training, development of written programs, safety audits, return to work programs, safety committees, accident investigation, and a variety of other services as needed.
Ladder Safety – Module 1

General Ladder Use Hazards

January, 2011

Portable Ladder Safety

This course will help you learn how to work safely when using portable ladders and avoid falling and getting injured. It is designed to promote safe work practices based on requirements of the Portable and Fixed Ladder Standard - WAC 296-876.

Topics Covered

1. Introduction
2. Reasons for falls from ladders
3. Ladder use training requirements
4. Ratings and labels on ladders
5. Composition of ladders
6. Safe ladder practices

NOTE: Job-made ladders are not addressed in this course; only commercially manufactured ladders are covered, as they are widely available and used.
Introduction

Ladders are important and essential tools that are used widely in a variety of industries. They help us move up and down and work at different heights. Portable ladders, in particular, are useful tools because they can be readily moved or carried. They are simply built and come in many sizes, shapes and styles.

Introduction (Con't.)

Although ladders are easy to use, they are often misused or abused, causing serious injuries and deaths. These deaths and injuries could have been significantly reduced or eliminated with proper care and use.

Introduction (Con't.)

Injuries From Ladder Falls

from L & I worker compensation claims

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
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<tbody>
<tr>
<td>2005</td>
<td>2082</td>
<td>2356</td>
<td>2192</td>
<td>1872</td>
<td>1984</td>
</tr>
</tbody>
</table>

0 500 1000 1500 2000 2500

2005 2006 2007 2008 2009
Introduction (Continued)

You don't have to fall far to get hurt. Workers injured in falls from ladders are usually less than 10 feet above the ladder's base of support.

Recently, a worker fell while descending a ladder used to access a 30" counter and fractured his ankle. He died a week later from a blood clot caused by the fracture.

Ladder fatality report

Reasons for falls from ladders

Why do people fall from ladders if they are so easy to use?

• Setting up the ladder on an unstable or slippery base surface is a primary reason ladders fall over.
• Overreaching by the user.
• Setting up the ladder improperly.
• Loss of balance.

Reasons for Falls (continued)

• Improperly getting onto or off of the ladder.
• Mis-stepping or a slipping of the foot while climbing or descending.
• Being bumped by a cart or other object.
• Having a vehicle run into or bump you.
• People not paying attention to where they’re walking.

Online Video – “Don’t Fall For It” – describes actual ladder falls by workers – 13 minutes.

Whose coming through the door?
Ladder Safety Training

- Employers have a responsibility to make sure that each employee who uses a ladder understands how to use the ladder correctly on the job.
- They must provide training to employees in recognizing hazards related to ladders and in the procedures they must follow to minimize these hazards.
- Employees have a responsibility to observe the rules and follow the procedures established by their companies’ programs, and to work safely when using ladders.

Training (continued)

A competent person must conduct the training.

A competent person is an individual who:

- Is knowledgeable of ladders, including the manufacturers’ recommendations and instructions for proper use, inspection, and maintenance.
- Can identify existing and potential or predictable hazards in the work environment, and evaluate the risk of falls.
- Has the authority to take prompt corrective measures to eliminate those hazards.
- Is knowledgeable of the rules contained in the safety standards regarding the use, inspection, and maintenance of ladders.

Training (continued)

The training must cover the following areas:

- The nature of the ladder hazards at the worksite.
- Proper construction, use, placement, and care in handling ladders.
- Maximum intended load-carrying capacities of ladders used.
- Safety standards for the types of ladders that will be used.
Types of Ladders

To prevent injuries while using portable ladders, you need to know what kinds of ladders there are and how to use them properly. There are various types, shapes, and sizes of ladders to help you accomplish your tasks.

- Step Ladder
- Extension Ladder
- Platform Ladder
- Orchard Ladder
- Combination Ladder

Further descriptions of different types of ladders are covered in Ladder Safety - Module 2

Ladder Ratings and Labels

Although there are many different kinds of portable ladders, they all receive a rating based on their maximum intended or working load - the total weight that they can safely support. This includes the weight of the worker, tools, and materials.

<table>
<thead>
<tr>
<th>RATING</th>
<th>MAXIMUM LOAD</th>
<th>USES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I-AA</td>
<td>375 lbs</td>
<td>Special duty industrial use, such as CATV, utilities, contractors, and higher capacity needs</td>
</tr>
<tr>
<td>Type I-A</td>
<td>300 lbs</td>
<td>Extra-heavy-duty industrial use, such as utilities and contractors</td>
</tr>
<tr>
<td>Type I</td>
<td>250 lbs</td>
<td>Heavy-duty industrial use, such as utilities and contractors</td>
</tr>
<tr>
<td>Type II</td>
<td>225 lbs</td>
<td>Medium-duty work, such as painting, offices for building maintenance, and light industrial use</td>
</tr>
<tr>
<td>Type III</td>
<td>200 lbs</td>
<td>Light-duty work, such as household use</td>
</tr>
</tbody>
</table>

These ratings must meet certain American National Standards Institute (ANSI) standards and they must be indicated on the duty rating sticker or manufacturer’s label. ANSI requires that every ladder be labeled with this information so users can determine if they have the correct type of ladder for the task/job.
Besides their ratings, labels and markings found on manufactured ladders contain product information, such as:

- Manufacturer’s name
- Ladder’s model number/name
- Month and year of manufacture
- Ladder’s size/length, maximum working length,
- Highest standing level

Manufactured ladders have warning markings and labels, such as "CAUTION" and "DANGER," which are usually in red or yellow. They often also have "SAFETY" labels which give information on how to use the ladders safely.

Before you use a ladder, check its rating to see if you have the right ladder for the job. Be sure not to subject the ladder to a work load greater than its rated capacity. And, always read manufacturers’ labels and follow their recommendations. Do yourself a favor and avoid a fall and injury to yourself.
Ladder Composition

Besides having different ratings or load capacities, ladders may be constructed of various kinds of materials – usually wood, fiberglass or metal. Each material has specific care, maintenance, and storage requirements and may be preferred for specific uses, or under certain conditions.

<table>
<thead>
<tr>
<th>Material</th>
<th>Stability</th>
<th>Durability</th>
<th>Strength-to-weight ratio</th>
<th>Weather-resistance</th>
<th>Conductivity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WOOD</strong></td>
<td>Better (heavier)</td>
<td>Less</td>
<td>Good</td>
<td>Not as good</td>
<td>Non-conductive when clean and dry</td>
</tr>
<tr>
<td><strong>FIBERGLASS</strong></td>
<td>Less (lighter)</td>
<td>Better</td>
<td>High</td>
<td>Better</td>
<td>Non-conductive when clean and dry (preferred)</td>
</tr>
<tr>
<td><strong>ALUMINUM/METAL</strong></td>
<td>Less (lighter)</td>
<td>Better</td>
<td>High</td>
<td>Better</td>
<td>Conductive – do not use near exposed electrical sources</td>
</tr>
</tbody>
</table>

Ladder Composition (continued)

General Characteristics
(These may vary, depending on the specific kind of wood or metal that the ladder is constructed of)

When selecting a ladder, you should consider the different properties: weight, durability, and other characteristics, like conductivity. Conductivity is important if you are working around power lines or other electrical or energized sources.

Dangerous practice!! Avoid using metal ladders around power lines
Ladder Composition (continued)

Do not use a metal ladder when working around energy sources. Metal ladders must be labeled with a DANGER warning sticker stating:

- “Electrocution Hazard”
- “This Ladder Conducts Electricity”
- “Do Not Use Around Electrical Equipment”
- Or other equivalent wording

Ladder Composition (continued)

Wood, metal, and fiberglass ladders may also have some specific construction requirements. For example, metal and fiberglass ladders must have:

- Slip or skid-resistant feet
- Steps or rungs that are corrugated, knurled, dimpled, coated with skid-resistant material, or treated to minimize possible slipping

Inspect ladders before use

Look for cracks, splits, dents, bends, corrosion, and missing hardware.

All of these ladders are unsafe and could fail if used by employees.
Mud, Oil or Grease

Keep shoes/boots free of slippery substances.

Inspect ladder rungs for any oil, grease, mud or other slippery substances which could affect traction.

Climbing or descending a ladder

When climbing a ladder, you must have both hands free and face the ladder. This allows for three points of contact with the ladder at all times and reduces the chances of falling. The three point contact is two hands and one foot or one hand and two feet.

Step Ladder Misuse

Rather than a firm, level surface, this stepladder is positioned on a fence so the such that the bottom step is taking the load rather than the side rails. It doesn't extend three feet above the roof surface, is not secured, and the worker is standing on the top step to access roof.

Stepladders can't be used partially closed and leaned against the wall.
Step-Ladder Safety Tips

- Open up step ladder legs completely and lock the spreader bar braces.
- Don’t stand on the top step or top cap.
- Don’t use it as a straight ladder to climb up to a higher surface.

Never use the top of a step ladder

Warning labels on stepladders clearly state that the top step and top cap are not to be used as a step. The higher you are on a step ladder, the less stable it becomes.

Setting up an extension ladder

- When working from an extension ladder, make sure it is set up at a 4:1 angle with secure footing on a firm level surface.
- For accessing an upper level, make sure the extension ladder is set up at a 4:1 angle on a firm, level surface and the side rails extend at least 3' above the surface to be accessed.
- Lastly, make sure the extension ladder is secured at the top and bottom.

Proper ladder set-up

Improper ladder set-up (not 3 ft. above roof line)
Proper Extension Ladder Setup

For every four feet of ladder length measured from where the ladder contacts the support point, the base of the ladder should be one foot away from the supporting structure (one to four rule).

The ladder must extend at least three feet above the surface to provide safe access or be rigidly secured at the top with a grasping device if less than three feet.

The ladder in the photo contacts the supporting structure at 9 feet. This means that the base of the ladder should be 27 inches back from the support.

Determining proper ladder setup angle

One way to ensure proper angle is to stand with your feet at the base of the ladder and extend your arms straight out. If your hands just touch, the ladder will be very close to the 4 to 1 ratio.

Climbing and descending

This worker does not have both hands free to hold onto the ladder while climbing or descending the ladder.

Proper ladder climbing with tools on belt and both hands free
More Information

- L & I - Ladder Safety Webpage
- OSHA – Construction Ladder Misuse
- OSHA – QuickCard Portable Ladder Safety Tips
- Ladder Safety.org – summary of types of ladders
- WorksafeBC – Safe Ladder Use – 13 minute online video
- Ladder Safety Checklist

Note: for review, 4 quiz questions with answers follow this slide

Portable Ladder Safety

Training - Question 1

You have to fall more than 15 feet from a ladder before you get hurt.

- True
- False

Portable Ladder Safety

Training - Question 1 - ANSWER

You have to fall more than 15 feet from a ladder before you get hurt.

- True
- False

False – Workers injured in falls from ladders are usually less than 10 feet above the ladder’s base of support.
Portable Ladder Safety

Training - Question 2

Injuries from ladders can occur from:

- Reaching too far out away from the ladder
- Misstep or slip of the foot while climbing
- Setting up the ladder on an unstable or slippery surface
- All of the above

Portable Ladder Safety

Training - Question 2 ANSWER

Injuries for ladders can occur from:

- Reaching too far out away from the ladder
- Misstep or slip of the foot while climbing
- Setting up the ladder on an unstable or slippery surface
- All of the above

All of the above reasons may result in injuries from falls from ladders.

Portable Ladder Safety

Composition – Question 3

A ladder is rated according to:

- It's size
- How it is to be used
- The total weight that it can safely support
- The kind of material it is made of
Portable Ladder Safety

Composition – Question 3 - ANSWER

A ladder is rated according to:

- It’s size
- How it is to be used
- The total weight that it can safely support
- The kind of material it is made of

Portable Ladder Safety

Composition – Question 4

A Type I ladder refers to:

- A ladder made of fiberglass
- A ladder rated for heavy industrial use, 250 lbs.
- A ladder rated for household use, 200 lbs.
- A ladder made of wood

Portable Ladder Safety

Composition – Question 4 - ANSWER

A Type I ladder refers to:

- A ladder made of fiberglass
- A ladder rated for heavy industrial use, 250 lbs.
- A ladder rated for household use, 200 lbs.
- A ladder made of wood
Hazard Communication Training Program (including GHS revisions)

Agenda
- Overview of changes to the Hazard Communication Standard (Haz Com)
- Labeling requirements
- Safety Data Sheets (SDS) format – 16 sections

Why the Change to Haz Com?
- To align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) adopted by 67 nations
- To provide a common and coherent approach to classifying chemicals
- Reduce confusion and increase understanding of the hazards
- Facilitate training
- Help address literacy problems
Who is Affected?

- Manufacturers, Distributors, Importers
  - Change SDS information and format
  - Change container labeling
- Employers
  - Training employees on changes to:
    - SDS (change from MSDS to SDS and 16-section format)
    - Container Labels (including secondary containers)
- Employees
  - Recognize and understand hazards based on:
    - Information in new SDS format
    - Pictograms on container labels
    - Precautionary and hazard statements

Other Standards Affected – Health (signage requirements)

- Asbestos
- Carcinogens
- Vinyl Chloride
- Inorganic Arsenic
- Lead
- Cadmium
- Benzene
- Coke Oven Emissions
- Acrylonitrile
- Ethylene Oxide
- Formaldehyde
- Methyleneedianiline

Other Standards Affected

- Flammable and Combustible Liquids
- Spray Finishing using Flammable and Combustible Materials
- Process Safety Management of Highly Hazardous Chemicals (PSM)
- Hazardous Waste Operations and Emergency Response (HAZWOPER)
- Hazardous Work In Laboratories
- Dipping and Coating Operations
- Welding, Cutting and Brazing
- Employee Medical Records and Trade Secrets
## Effective Dates and Requirements

<table>
<thead>
<tr>
<th>Effective Completion Date</th>
<th>Requirement(s)</th>
<th>Responsible Party</th>
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</thead>
<tbody>
<tr>
<td>December 1, 2013</td>
<td>Train employees on the new label elements and SDS format</td>
<td>Employers</td>
</tr>
<tr>
<td>June 1, 2015</td>
<td>Compliance with all modified provisions of the final rule except:</td>
<td>Chemical manufacturers, importers, distributors, and employers</td>
</tr>
<tr>
<td>December 1, 2015</td>
<td>The distributor shall not ship containers labeled by the chemical manufacturer or importer unless it is a GHS label</td>
<td>Distributor</td>
</tr>
<tr>
<td>June 1, 2016</td>
<td>Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified hazards (and affected vertical standard specific signage)</td>
<td>Employer</td>
</tr>
<tr>
<td>Transition Period: 12/2012 to the effective completion dates noted above</td>
<td>May comply with either OSHA (final standard), or the current standard, or both</td>
<td>Chemical manufacturers, importers, distributors, and employers</td>
</tr>
</tbody>
</table>

## Chemical Classifications

Chemicals will be classified using a harmonized system that provides standardized language for:

- **Health Hazard Categories**
- **Physical Hazard Categories**
- **Environmental Hazard Categories**

*Not regulated by OSHA*

## Chemical Classifications:

### Health Hazards

- Acute Toxicity
- Skin Corrosion/Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicity
- Specific Target Organ Toxicity – Single Exposure
- Specific Target Organ Toxicity – Repeated Exposure
- Aspiration
- Simple Asphyxiants
### Chemical Classifications:

#### Health Hazards

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Hazard Category</th>
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</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>1A, 1B, 1C, 2</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>1, 2A, 2B</td>
</tr>
<tr>
<td>Respiratory or Skin Sensitization</td>
<td>1</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>1A, 1B, 2</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>1A, 1B, 2</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>1A, 1B, 2</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity – Single Exposure</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity – Repeated Exposure</td>
<td>1, 2</td>
</tr>
<tr>
<td>Aspiration</td>
<td>1</td>
</tr>
<tr>
<td>Simple Asphyxiants</td>
<td>Single Category</td>
</tr>
</tbody>
</table>

#### Physical Hazards

- Explosives
- Flammable Aerosols
- Oxidizing Gases
- Gases under Pressure
  - Compressed Gases
  - Liquefied Gases
  - Refrigerated Liquefied Gases
  - Dissolves Gases

#### Physical Hazards (continued)

- Flammable Liquids
- Flammable Solids
- Self-Reactive Chemicals
- Pyrophoric Liquids
- Pyrophoric Solid
- Pyrophoric Gases
- Self-heating Chemicals
- Chemicals, which in contact with water, emit flammable gases
Chemical Classifications:
Physical Hazards (continued)

- Oxidizing Liquids
- Oxidizing Solid
- Organic Peroxides
- Corrosive to Metals
- Combustible Dusts

Chemical Classifications:
Physical Hazards

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosives</td>
<td>Unstable</td>
</tr>
<tr>
<td>Explosives</td>
<td>Div 1.1, Div 1.2, Div 1.3, Div 1.4, Div 1.5, Div 1.6</td>
</tr>
<tr>
<td>Flammable Gases</td>
<td></td>
</tr>
<tr>
<td>Flammable Aerosols</td>
<td>1, 2</td>
</tr>
<tr>
<td>Oxidizing Gases</td>
<td>1</td>
</tr>
<tr>
<td>Gases under Pressure</td>
<td></td>
</tr>
<tr>
<td>Compressed gases</td>
<td></td>
</tr>
<tr>
<td>Liquefied gases</td>
<td></td>
</tr>
<tr>
<td>Refrigerated liquefied gases</td>
<td></td>
</tr>
<tr>
<td>Dispersed gases</td>
<td></td>
</tr>
<tr>
<td>Flammable Liquids</td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Flammable Solids</td>
<td>1, 2</td>
</tr>
<tr>
<td>Self-Reactive Chemicals</td>
<td>Type A, Type B, Type C, Type D, Type E, Type F, Type G</td>
</tr>
<tr>
<td>Pyrophoric Liquids</td>
<td>1</td>
</tr>
<tr>
<td>Pyrophoric Solids</td>
<td>1</td>
</tr>
<tr>
<td>Pyrophoric Gases</td>
<td>Single Category</td>
</tr>
<tr>
<td>Self-Heating Chemicals</td>
<td>1, 2</td>
</tr>
<tr>
<td>Chemical in which contact with water emits flammable gases</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Oxidizing Liquids</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Oxidizing Solids</td>
<td></td>
</tr>
<tr>
<td>Organic Peroxides</td>
<td>Type A, Type B, Type C, Type D, Type E, Type F, Type G</td>
</tr>
<tr>
<td>Corrosive to Metals</td>
<td></td>
</tr>
<tr>
<td>Combustible Dusts</td>
<td>Single Category</td>
</tr>
</tbody>
</table>

Labels

There are several new label elements:
- Symbols called "Pictograms"
- Signal Words
- Hazard Statements
- Precautionary Statements
- Product Identification
- Supplier/Manufacturer Identification

www.osha.gov/Publications/Match/Comm_QuickCard_Labels.html
Effective June 1, 2015 all shipping labels will be required to have all GHS label elements.

DOT and OSHA Labels

- DOT labels may take precedence over similar GHS pictograms for shipping containers.
- DOT does not have labels that correspond to the “Health Hazard” or the “Acute Toxicity” (less severe = exclamation mark).
Labels: Pictograms

- There are 9 pictograms. Only 8 are regulated by OSHA.
- Health Hazards
- Physical Hazards
- Environmental Hazards (Regulated by EPA)

Labels: Pictograms – Health Hazards

Acute toxicity (Severe)
Acute toxicity (Less Severe):
Irritant
Dermal sensitizer
Acute toxicity (harmful)
Narcotic effects
Respiratory tract irritation

Acute = short-term effect

Labels: Pictograms – Health Hazards (continued)

Skin corrosion
Serious eye damage/
Eye irritation

Carcinogen
Respiratory sensitizer
Reproductive toxicity
Target organ toxicity
Mutagenicity
Aspiration Hazard
Labels: Pictograms – Physical Hazards

- Flammables
- Self reactives
- Pyrophorics
- Self heating
- Emits flammable gas
- Organic peroxides

Labels: Pictograms – Physical Hazards (continued)

- Corrosive to Metals
- Oxidizer
- Gases under Pressure

Labels: Signal Word

These are words used to indicate the severity of the hazard and alert employees to the potential hazard.

Only 2 signal words will appear:
- "DANGER" (more severe hazard)
- "WARNING" (less severe hazard)

Not all labels will have a signal word. Some chemicals are not hazardous enough to require that a signal word appear on the label.
Labels: Hazard Statement

There are specific hazard statements that must appear on the label based on the chemical hazard classification.

Examples:
- Flammable liquid and vapor
- Causes skin irritation
- May cause cancer

Labels and other forms of warning – Precautionary Statements

- Recommended measures related to:
  - Prevention
  - Response
  - Storage
  - Disposal
- Examples:
  - Wear respiratory protection
  - Wash with soap and water
  - Store in a well ventilated place
- Not a mandate for employers/employees to follow.

Label: Identification

- Product identification (i.e. name of product)
- Supplier identification:
  - Address
  - Telephone number
Label: Other information

Other information that may be included on the label:
- Physical state
- Color
- Hazards not otherwise classified
- Route of exposure
- Storage and disposal
- Hazard prevention and emergency response instructions

Secondary Container Labels

Excerpt from the Hazard Communication Standard (f):

- (6) Workplace labeling. Except as provided in paragraphs (7) and (8) of this section, the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with either:
  - (i) The information specified under paragraphs (1)(i) through (v) of this section for labels on shipped containers [GHS Label]; or,
  - (ii) Product identifier and words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical [e.g. HMIS, NFPA or other label system].

Labels: Secondary containers

- Must be consistent with the revised Haz Com standard
- No conflicting hazard warnings or pictograms.
- May use written materials (e.g., signs, placards, etc.) in lieu of affixing labels to individual stationary process containers.
- Employer can use GHS compliant labels (same as shipping).

HMIS Label

NFPA Label

Must include notation of chronic health effects
Safety Data Sheets

- Under the new Haz Com Standard, Material Safety Data Sheets (MSDS) are now called Safety Data Sheets (SDS).
- All SDSs will have a consistent 16-section format.
- Employers must ensure that SDSs are readily accessible to employees.

Safety Data Sheets (SDSs)
New 16-section standardized SDS format required (ANSI Z400.1)

<table>
<thead>
<tr>
<th>Section 1 – Identification</th>
<th>Section 2 – Hazard(s) Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 3 – Composition / Information on Ingredients</td>
<td>Section 4 – First-aid Measures</td>
</tr>
<tr>
<td>Section 5 – Fire-fighting Measures</td>
<td>Section 6 – Accidental Release Measures</td>
</tr>
<tr>
<td>Section 7 – Handling and Storage</td>
<td>Section 8 – Exposure Controls / Personal Protection</td>
</tr>
<tr>
<td>Section 9 – Physical and Chemical Properties</td>
<td>Section 10 – Stability and Reactivity</td>
</tr>
<tr>
<td>Section 11 – Toxicological Information</td>
<td>Section 12 – Ecological Information*</td>
</tr>
<tr>
<td>Section 13 – Disposal Consideration*</td>
<td>Section 14 – Transport Information*</td>
</tr>
<tr>
<td>Section 15 – Regulatory Information*</td>
<td>Section 16 – Other information including date of preparation of last revision</td>
</tr>
</tbody>
</table>

*Sections outside of OSHA jurisdiction but inclusion of these sections is necessary for a GHS compliant SDS

Safety Data Sheets (continued)

Section 1 – Identification:
Identifies the chemical on the SDS as well as the recommended uses. It also provides the essential contact information of the supplier.

Section 2 - Hazards Identification:
- Hazards of the chemical presented on the SDS
- Appropriate warning information associated with those hazards.
### Safety Data Sheets (continued)

**Section 3 – Composition / Ingredients:**
Identifies the ingredient(s) contained in the product indicated on the SDS, including:
- impurities and stabilizing additives.
- information on substances, mixtures, and all chemicals where a trade secret is claimed.

**Section 4 - First-Aid Measures:**
Describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical.

---

### Safety Data Sheets (continued)

**Section 5 – Fire-Fighting Measures:**
Provides recommendations for fighting a fire caused by the chemical.

**Section 6 - Accidental Release Measures:**
Provides recommendations:
- Appropriate response to spills, leaks, or releases, (e.g. containment and cleanup practices)
- Response for large vs. small spills, if different.

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### Safety Data Sheets (continued)

**Section 7 – Handling and Storage:**
Provides guidance on the safe handling practices and conditions for safe storage of chemicals.

**Section 8 – Exposure Controls / Personal Protection:**
Indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure.
Safety Data Sheets (continued)

Section 9 – Physical and Chemical Properties:
Identifies physical and chemical properties associated with the substance or mixture.

Section 10 – Stability and Reactivity
Describes the reactivity hazards of the chemical and the chemical stability information. Includes: reactivity, chemical stability, and other.

Safety Data Sheets (continued)

Section 11 – Toxicological Information:
Identifies toxicological and health effects information or indicates is data unavailable.

Section 12 – Ecological Information*
Section 13 – Disposal Consideration*
Section 14 – Transport Information*
Section 15 – Regulatory Information*

*Sections are outside of OSHA jurisdiction but must be included for a GHS compliant SDS.

Safety Data Sheets (continued)

Section 16 – Other Information
Indicates when the SDS was prepared or when the last known revision was made.

The SDS may also state where the changes have been made to the previous version.
Wrap Up

• The Hazard Communication/GHS standard is in place to provide information to employees

• Be familiar with hazardous substances/chemicals that you may come in contact with
  • Know where SDS are located
  • Understand labels
Lockout/tagout

**Authorized employees**

Employers authorize certain employees to bypass guards and enter the machinery’s point of operation to perform tasks.

**Types of employees**

**Authorized employee:**
A person who locks out or tags out machines to perform servicing or maintenance on the machines.
Types of employees

Affected employee:
• An employee responsible for operating the equipment
• An employee who works in the area

Types of employees

Authorized employees must:
• Understand role in controlling energy
• Ensure that affected employees are informed

Types of employees

Authorized employees must:
• Understand energy control program
• Be able to recognize:
  • Hazardous energy sources
  • Type and magnitude of energy available
  • Methods and mean to isolate and control energy
Lockout definition
Process of preventing the flow of energy
• Consists of installing a lock, block, or chain
• Requires an authorized employee to apply/remove lock

Tagout definition
Process of placing tag on power source
• Tag acts as a warning
• Tag must clearly state "Do not operate"
• Tag used when machine won't accept lock
• Tag must be applied/removed by an authorized employee

Hazardous energy sources
• Electrical
• Mechanical
• Pneumatic
• Hydraulic
Hazardous energy sources
- Chemical
- Thermal
- Water under pressure
- Gravity
- Potential energy

Energy control program
- Energy control procedures
- Employee training
- Periodic inspections

Energy control program
Energy control procedure includes:
- Intended use of the procedure
- Specific steps to control hazardous energy
- Specific requirements for verification
Energy control program

- Each type of machine needs its own LOTO procedure
- Lockout must be used unless device cannot be locked out
- Tagout must be used when unable to lockout

Work activities

- Constructing
- Installing
- Setting up
- Adjusting
- Inspecting
- Modifying
- Repairing
- Cleaning equipment

Prepare for shutdown

Procedures for controlling energy:
- Prepare for shutdown
- Shutdown
- Isolate equipment from energy
- Apply lockout or tagout device
- Release of stored energy
- Verify isolation
**Prepare for shutdown**

Step one:
- Know the type and magnitude of energy
- Know the hazards of energy
- Know the methods or means to control it

**Shutdown**

Step two:
- Turn off equipment using normal controls
- Use orderly shutdown

**Isolate equipment**

Step three:
- Isolate equipment from energy sources
- Secure lock to energy isolating device
Apply devices
Step four:
- Notify affected employees
- Attach lockout/tagout devices

Apply devices
- Only authorized employee can attach or remove lockout and tagout devices
- Devices must be durable
- Devices must identify person who applied them

Release stored energy
Step five:
- Relieve stored energy
- Verify machine isolation from energy
Release stored energy
Steps to release stored energy:
• Relieve pressure in compressed air line
• Insert a block

Verify isolation
Step six:
• Verify machine is deenergized
• Verify machine is isolated

Lockout devices
• Authorized employee must have own device
• Device must be used to control energy only
Lockout devices

Devices could be:
- Locks
- Tags
- Chains
- Wedges
- Key blocks
- Adapter pins
- Self-locking fasteners

Lockout devices

Devices must have the following qualities:
- Be durable
- Be standardized in color, shape, or size
- Be substantial enough to prevent removal

Tags

Tags must have the following qualities:
- Be durable
- Be standardized in print and format
- Be substantial enough to prevent removal
- Be one-piece, environmental tolerant
- Include warning statements
**Group lockouts**

- Each authorized employee must affix a personal lockout or tagout device
- Each authorized employee must remove the device when works stops

**Shift changes**

- Lockout/tagout protection must be continuous
- Lockout/tagout protection must have an orderly transfer between employees

**Device removal**

- Lockout or tagout device must be removed by the authorized employee who applied it
- Device may be removed under direction of employer if authorized employee unavailable
Device removal
Steps employers must take before removing a lock or tag:
• Verify that authorized employee who applied lock is not at the facility
• Take all reasonable efforts to contact the authorized employee

Restoring energy
• Inspect work area
• Ensure employees are safe
• Notify affected employees
Purpose

- This standard should be used to ensure that a machine or piece of equipment is isolated from all potentially hazardous energy.
- Equipment should be locked out or tagged out before any servicing or maintenance activities are performed where the unexpected energization, start-up, or release of stored energy could cause injury.

Lockout/Tagout

- Training Objectives
  - Understand the importance of proper Lockout/Tagout procedures.
  - Identify hazards that require Lockout/Tagout precautions.
  - List the steps to proper Lockout/Tagout.
Responsibility

- Appropriate employees shall be instructed in the safety significance of Lockout/Tagout procedures.
- Each new or transferred “affected” employee and any other employee whose work operations are or may be in the area should be instructed on the purpose and use of this procedure.

What is Lockout/Tagout?

- A method of preventing injury during work on/around equipment which might result from the following events:
  - Motion, energization, or start-up of equipment.
  - Release of stored or residual energy or chemicals.
  - Movement, falling or shifting of objects.

Lockout/Tagout

- Hazardous Situations Where Lockout/Tagout Procedures are needed.
  - Repair
  - Maintenance
  - Cleaning
  - Mechanical or operational problems
Why is Lockout/Tagout Important?

- Improper use or failing to use may result in injury or death.
- We want to PREVENT YOU from being injured.
- It is an OSHA Regulation as of January, 1990 (29 CFR 1910.147).

When Should Lockout/Tagout be Used?

- When you are performing:
  - Maintenance;
  - Repair work;
  - Cleaning;
  - Making adjustments;
  - Equipment Modifications;
  - Clearing jams...

Who MUST be Trained?

- Employees who are performing the actual Lockout/Tagout operations.
- Anyone in or passing through the area(s) where a Lockout/Tagout is in process.
Procedures

- Six Step Procedure For Proper Shutdown.
  - Before Shutdown
  - Shutdown
  - Isolation
  - Lockout/Tagout
  - Energy Release
  - Testing

Sequence for Lockout/Tagout

- Notify all AFFECTED employees;
- Shut down equipment;
- Stored energy MUST be released;
- Lockout/Tagout machine with your OWN key and lock;
- Test equipment to make certain it will NOT operate;
- The equipment is now locked out and tagged out.

Restoring Machines or Equipment to Normal Operations

- After your work is finished check all areas around the equipment to ensure that no one is exposed;
- Remove all tools, replace all guards and remove the Lockout/Tagout devices;
- Notify all affected employees that Lockout procedures have been removed.
More than One Person Performing the Lockout/Tagout

Each individual MUST use their OWN lock.

Outside Contractors

Team work must be used when working with outside contractors in order to coordinate Lockout/Tagout procedures.

Basic Principles of Lockout/Tagout

- A tag alone may NOT be used because...
  - They are not reliable.
  - They provide no physical protection.
  - They are just a warning device.
Your Lock and Key...

- Shall NOT be duplicated.
- Are YOUR responsibility.
- Your lock shall only be removed by YOU.

Interlocks

- Are NOT an acceptable means to isolate energy for the following reasons:
  - Interlocks can fail in unsafe mode.
  - Interlocks do not usually disconnect energy source from equipment.
  - Interlocks can sometimes be bypassed.

Types of Lockout/Tagout Processes

- Electrical;
- Chemical;
- Pneumatic;
- Mechanical;
- Gravity.
Every Situation is Different

- Due to the number and diversity of situations, it is impossible to determine a generic set of procedures.
- Each situation is unique and Lockout/Tagout procedures MUST be developed for each situation.

Manager and Supervisor Responsibilities

- Identify all equipment and activities requiring Lockout/Tagout procedures.
- Develop Standard Operating Procedures for locking out each piece of equipment.
- Ensure all vendors and contractors on the property follow Lockout/Tagout procedures.
- Maintain designated area for locks and tags to be stored.

Summary

- Every situation is different.
- Written procedures MUST be in place for performing a Lockout/Tagout.
- It is YOUR responsibility to ensure that a Lockout is properly completed.
- YOUR ONE LOCK = YOUR ONE KEY!

Introduction

• Fires and explosions kill more than 200 and injure more than 5,000 workers each year.
• There is a long and tragic history of workplace fires in this country caused by problems with fire exits and extinguishing systems.
• OSHA requires employers to provide proper exits, fire fighting equipment, and employee training to prevent fire deaths and injuries in the workplace.

Exit Route

• A continuous and unobstructed path of exit travel from any point within a workplace to a place of safety (including refuge areas).
• Consists of three parts:
  ➢ Exit access
  ➢ Exit
  ➢ Exit discharge
Exit Routes
Basic Requirements

- Exit routes must be permanent and there must be enough exits in the proper arrangement for quick escape
- Exits must be separated by fire-resistant materials
- Openings into an exit must be limited to those necessary to allow access to the exit or to the exit discharge
- An opening into an exit must be protected by an approved self-closing fire door that remains closed or automatically closes in an emergency

Exit Discharge

- Each exit discharge must lead directly outside or to a street, walkway, refuge area, public way, or open space with access to the outside that is large enough to accommodate all building occupants likely to use the exit route
- Exit stairs that continue beyond the level on which the exit discharge is located must be interrupted on that level by doors, partitions, or other effective means that clearly indicate the direction of travel to the exit discharge

Exit Doors Must Be Unlocked

- Must be able to open from the inside at all times without keys, tools, or special knowledge
- Device such as a panic bar that locks only from the outside is permitted
- Must be free of any device or alarm that could restrict emergency use if the device or alarm fails
- May be locked from the inside only in mental, penal, or correctional facilities where there is constant supervision
**Side-Hinged Exit Door**

- Must be used to connect any room to an exit route
- A door that connects any room to an exit route must swing out in the direction of exit travel if the room is designed to be occupied by more than 50 people or contains high hazard contents

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**Exit Route Capacity and Dimensions**

- Must support the maximum permitted occupant load for each floor served
- Capacity must not decrease in the direction of exit route travel to the exit discharge
- Ceiling must be at least 7-½ ft. high with no projection reaching a point less than 6 ft.-8 in. from floor
- An exit access must be at least 28 in. wide at all points

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**Minimize Danger to Employees**

- Exit routes must be free and unobstructed
- Keep exit routes free of explosive or highly flammable materials
- Arrange exit routes so that employees will not have to travel toward a high hazard area, unless it is effectively shielded
- Emergency safeguards (e.g., sprinkler systems, alarm systems, fire doors, exit lighting) must be in proper working order at all times
Exit Marking

- Each exit must be clearly visible and marked with an "Exit" sign
- Each exit route door must be free of decorations or signs that obscure the visibility of the door

Exit Marking (cont'd)

- If the direction of travel to the exit or exit discharge is not immediately apparent, signs must be posted along the exit access indicating direction to the nearest exit
- The line-of-sight to an exit sign must clearly be visible at all times

Exit Marking (cont'd)

Each doorway or passage along an exit access that could be mistaken for an exit must be marked "Not an Exit" or similar designation, or be identified by a sign indicating its actual use (e.g., closet).
Emergency Action Plan

- Describes actions that must be taken to ensure employee safety in emergencies
- Includes floor plans or maps which show emergency escape routes
- Tells employees what actions to take in emergency situations
- Covers reasonably expected emergencies, such as fires, explosions, toxic chemical releases, hurricanes, tornadoes, blizzards, and floods

Fire Prevention Plan

The plan must include:
- A list of the major fire hazards and handling, storage, and control procedures
- Names or job titles of persons responsible for maintenance of equipment and systems to prevent or control ignitions or fires
- Names or job titles of persons responsible for control of fuel source hazards
- Training for all employees who have responsibilities in the plan

Portable Fire Extinguishers

If portable fire extinguishers are provided for employee use, the employer must mount, locate and identify them so workers can access them without subjecting themselves to possible injury.
Extinguisher Classification

Letter classification given an extinguisher to designate the class or classes of fire on which it will be effective.

- **Class A** – ordinary combustibles (wood, cloth, paper)
- **Class B** – flammable liquids, gases, greases
- **Class C** – energized electrical equipment
- **Class D** – combustible metals

Extinguisher Rating

- Numerical rating given to Class A and B extinguishers which indicate how large a fire an experienced person can put out with the extinguisher
- Ratings are based on tests conducted at Underwriters’ Laboratories, Inc.
  - Class A: 1-A, 2-A, . . . 40-A
  - Class B: 1-B, 2-B, . . . 640-B
- A 4-A extinguisher, for example, should extinguish about twice as much fire as a 2-A extinguisher

Maintaining Portable Fire Extinguishers

- Must maintain in a fully charged and operable condition
- Must keep in their designated places at all times except during use
- Must conduct an annual maintenance check
- Must record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less
Portable Fire Extinguisher Training and Education

- Where portable fire extinguishers have been provided for employee use in the workplace, employees must be provided with an educational program on the:
  - General principles of fire extinguisher use
  - Hazards of incipient (beginning) stage fire fighting
- Employees designated to use extinguishers must receive instruction and hands-on practice in the operation of equipment

Summary

- There must be enough exits in the proper arrangement for quick escape
- Exit routes must be marked, lighted, free of obstructions, and locks must not be used to impede or prevent escape
- An emergency action plan and a fire prevention plan must be in place
- Fire extinguisher classes and numerical ratings help a user understand its capabilities
- Fire extinguishers must be inspected, maintained and employees must be trained in how to use them
Introduction

- Eight of every ten Americans will experience a back injury in their lifetime
- Back injuries are estimated to cost American business billions of dollars in lost revenue annually
- Back injuries can be prevented / reduced with proven loss prevention techniques included in this presentation
Common Causes of Back Pain

- Poor Posture
- Faulty Body Mechanics
- Improper Lifting Techniques
- Stressful Living and Work Habits
- Loss of Strength and Flexibility
- General Decline of Physical Fitness

Common Causes of Back Pain

Stressful Living and Working Habits
- Reaching With a Heavy Load
- Work Too Low and Far Away
- A Sagging Mattress Leaves the Back in an Unbalanced Position

Common Causes of Back Pain

Accidents
- Decline of Physical Fitness
- Other risk factors:
  - Emotional stress
  - Poor nutrition
  - Lack of rest and smoking
Common Causes of Back Pain

- Knees in the Way
- Twisting Without a Pivot
- Weight Too Far Away

Uncommon Causes of Back Problems:
- Birth defects
- Metabolic changes or problems
- Infection
- Tumors
- Psychosomatic problems

Remember...It is the cumulative effect of poor posture, faulty body mechanics, stressful living and working habits, loss of strength and flexibility and poor physical fitness that causes back problems. These are the RISK FACTORS of back injury. Eliminate them as often as you can and you will have a healthy back.

Uncommon Causes of Back Injuries:
- Assess the load before attempting to lift; do you need assistance?
- Can you lift the load with a hand cart or other device?
- Make sure that the area is clear of objects before lifting and carrying
- Minimize the need to carry objects long distances
- Never twist while lifting or carrying objects

Basic Lifting Guidelines
- Plan Ahead--Test the Load Before Lifting

Lifting Techniques

- assessment of load
- use of equipment
- clear workspace
- minimizing effort
- proper posture
Basic Lifting Guidelines (Continued)

- Keep head high, chin tucked in and back in “power” position.
- Do as professional weight lifters do—keep a neutral spine when lifting.
- Keep weight close to body and stand up straight.
- Use wide stance with strongest leg forward while standing.
- Set abdominal muscles before and during lift.
- Stabilize wrists, shoulders and elbows.
- Secure your hand holds on the item to be lifted.
- Use legs and body weight to lift.
- Start lift slowly—No jerking movements.
- Don’t hold your breath.

Lifting Techniques

Full Range Lifting (Heavy Objects)
Squat, Head Up, Back In Neutral Position, Stomach Toned, Feet Spread to Shoulder Width, One Foot Ahead as You Lift, Concentrating Your Lift Through Your Legs and Buttocks.

The Golfer’s Lift (Light Objects)
Place one hand on sturdy object positioned at waist height (desk, etc.), lift your inside leg backward, bend forward with your arm extended to lift object from the floor. *Lifting your inside leg creates a counterbalance.

Team Work For Heavy Loads
- Size up the load. Get help if it is too heavy.
- When two or more carry a load, one person should act as the leader. Be sure you can see where you are going.
- Push rather than pull loads, if you have the choice.
- Support the load on your shoulder when carrying for long distances.
- Pivot, Don’t Twist.
- Keep Weight Close to Body.

Lifting Techniques

Other Important Tips
- Carry most of the load to the front.
- Pivot with your feet—don’t twist.
- Allow for clearance.
- Allow for clearance.
- Pivot, Don’t Twist.
- Don’t twist while lifting.
- Bend your back forward while lifting.
- Carry objects in a bent-over, stooped posture.
Anatomy of the Back

The spine is composed of:
- Vertebra
- Discs
- Spinal Cord and Nerves

In between each of the five lumbar vertebrae (bones) is a disc, a tough fibrous shock-absorbing pad. Endplates line the ends of each vertebra and help hold individual discs in place.

Excess spinal pressure can cause these discs to be compressed until they rupture. Disc herniation occurs when the annulus breaks open or cracks, allowing the nucleus to escape. This is called a Herniated Disc.
General Stretching Program

Before each shift
At each rest break
Before loading/unloading
Stretches (following slides, 6 basic stretches)
Hold stretch for 20-30 second counts
Repeat 3 times for full stretch when possible
Stretching should be slow and controlled; absolutely no bouncing
If stretching causes any pain, discontinue immediately!

General Stretching Program

Rope / Shoulder Stretch:
Use rope/towel; place towel over shoulder; grasp towel with other hand behind back and pull down gently with other arm. Hold 30 count, then reverse.

Back Extension:
Place feet shoulder width apart, tighten stomach muscles, place hands on hips, lean back for gentle stretch of 30 counts.

Calf Stretch:
Stand with one foot forward. Place hands shoulder width apart on a wall, directly in front of where you stand. Keep back leg straight and lean forward with a slight bend in the other leg. Hold for 30 second counts. Alternate legs to stretch both calves.

Neck Range of Motion:
- Flexion (forward)
- Extension (backward)
- Rotation
- Side-bending
- Retraction (chin tuck)

Behind the Back:
Clasp hands behind back and gently lift up for count of 30.

General Stretching Program

Hamstring Stretch:
Stand with feet shoulder width apart raise heel of one foot on a low elevated surface (bench, etc), keep leg straight, slowly bend forward with neutral spine. Switch to other leg.
**Good Sitting Posture Key Points**

- Use of back of seat for support
- Maintain natural low back curve
- Keep shoulders up-right with head centered over your spine
- Change hand positions periodically
- Keep feet positioned so your thighs maintain 90° angle from your back
- Keep feet planted flat on the floor; avoid crossing your legs

**Additional Safe Lifting Tips**

**General Tips While Working:**
- Clear your path
- Wear comfortable, cushioned, nonslip shoes
- Be aware of surfaces that tend to get slick during winter conditions/wet conditions
- Take short steps on slick surfaces to reduce possibility of slipping

**Remember the BACKS Acronym**

- (B)ase of support
- (A)void twisting
- (C)lose to object
- (K)nees bent
- (S)et abdominals
Questions?
Risk Assessment Results – 2020

Mark’s Top Ten Recommendations:

1. Requesting a current certificate of insurance from subcontractors that are hired.

2. Hand rails- to help reduce the slip / fall loss potential.


4. Boiler inspections – Travelers (boilinsp@travelers.com) 800- 425- 4119.

5. Beer and alcohol located on the property. Not in secured areas.

6. Winter conditions- ice / snow removal and logs.

7. General maintenance and housekeeping conditions.


9. Condition of sidewalks and other walkways.

10. The use of ladders.
Hazard Communication Standard Pictogram

As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification.

### HCS Pictograms and Hazards

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Flame</th>
<th>Exclamation Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Carcinogen</td>
<td>• Flammables</td>
<td>• Irritant (skin and eye)</td>
</tr>
<tr>
<td>• Mutagenicity</td>
<td>• Pyrophorics</td>
<td>• Skin Sensitizer</td>
</tr>
<tr>
<td>• Reproductive Toxicity</td>
<td>• Self-Heating</td>
<td>• Acute Toxicity (harmful)</td>
</tr>
<tr>
<td>• Respiratory Sensitizer</td>
<td>• Emits Flammable Gas</td>
<td>• Narcotic Effects</td>
</tr>
<tr>
<td>• Target Organ Toxicity</td>
<td>• Self-Reactives</td>
<td>• Respiratory Tract Irritant</td>
</tr>
<tr>
<td>• Aspiration Toxicity</td>
<td>• Organic Peroxides</td>
<td>• Hazardous to Ozone Layer (Non-Mandatory)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gas Cylinder</th>
<th>Corrosion</th>
<th>Exploding Bomb</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Gases Under Pressure</td>
<td>• Skin Corrosion/Burns</td>
<td>• Explosives</td>
</tr>
<tr>
<td></td>
<td>• Eye Damage</td>
<td>• Self-Reactives</td>
</tr>
<tr>
<td></td>
<td>• Corrosive to Metals</td>
<td>• Organic Peroxides</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flame Over Circle</th>
<th>Environment</th>
<th>Skull and Crossbones</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Oxidizers</td>
<td>• Aquatic Toxicity</td>
<td>• Acute Toxicity (fatal or toxic)</td>
</tr>
</tbody>
</table>

For more information:

OSHA®
Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)
Hazard Communication Standard Labels

OSHA has updated the requirements for labeling of hazardous chemicals under its Hazard Communication Standard (HCS). As of June 1, 2015, all labels will be required to have pictograms, a signal word, hazard and precautionary statements, the product identifier, and supplier identification. A sample revised HCS label, identifying the required label elements, is shown on the right. Supplemental information can also be provided on the label as needed.

For more information:
OSHA® Occupational Safety and Health Administration
(800) 321-OSHA (6742) www.osha.gov

SAMPLE LABEL

Product Identifier

CODE
Product Name

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

Supplier Identification

Hazard Pictograms

Signal Word
Danger

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

Hazard Statements

Precautionary Statements

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.

Supplemental Information

Directions for Use

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