

## **NPGA White Paper**

### **OSHA Hazard Communication Standard**

#### **I. INTRODUCTION**

The purpose of this white paper is to describe the changes to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) that were published by the agency in March 2012. The paper also seeks to facilitate a better understanding of how these changes affect the propane industry.<sup>1</sup>

The revisions to the HCS represent the first major update to the standard since 1994. These changes, as well as the entire Hazard Communication Standard, are found in Title 29 of the Code of Federal Regulations (CFR), Part 1910, Section 1200, i.e. 29 CFR 1910.1200. The first compliance date related to these revisions pertains to training only and must be completed by December 1, 2013 (See Section IV below). The remaining compliance dates are not until June 1, 2015 at the earliest.

#### **II. BACKGROUND**

According to OSHA, the purpose of the Hazard Communication Standard is to ensure that the hazards of all chemicals produced or imported are classified and that the information concerning the classified hazards is transmitted to employers and employees by the chemical manufacturers or importers (hereafter referred to as *chemical suppliers*). Employers are required to provide information to their employees about the hazardous chemicals to which the employees are exposed. This information is to be transmitted through the development of hazard communication programs that include information such as container labeling and other forms of warning, safety data sheets and employee training.

OSHA made these changes to bring the HCS into alignment with the United Nations (UN) Globally Harmonized System of Classification and Labeling (GHS). The modified standard provides a single set of harmonized criteria for classifying chemicals according to their health and physical hazards and specifies hazard communication elements for labeling and safety data sheets.

A sampling of current labels and safety data sheets within the propane industry suggests that they may be largely in compliance already with the new requirements and may only need minimal changes.

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### III. REVIEW OF MAJOR CHANGES TO HAZARD COMMUNICATION STANDARD

The major changes to HCS pertain to the following areas: *hazard classification*, *labels* and *safety data sheets*. The remainder of this document will describe each of these items in more detail.

#### A. Hazard Classification

Chemical suppliers are required to determine the hazards of the chemicals they produce or import and classify them according to their *health* and *physical* hazards. The definitions of the hazards have been changed to provide specific criteria for the classification of *health* and *physical* hazards. Employers are not required to classify the chemicals unless they choose not to rely on the classification performed by the chemical supplier.

The criteria for the classification of *health* hazards is addressed in Appendix A of 29 CFR 1910.1200 and those for the classification of *physical* hazards are in Appendix B.

#### B. Labels

The purpose of a label is to provide information to workers on the specific hazards of a chemical. Previously, labels conveyed workplace hazards from a performance-based perspective allowing the chemical supplier or employer to best determine how to communicate chemical hazards to the employee. OSHA is now taking a prescriptive approach mandating the communication (labeling) of specific chemical information. Specifically, the new requirements specify that labels include the following elements:

- **Product Identifier** - relates to how the chemical is identified. This can be the chemical name and code number (as established by the chemical supplier).
- **Signal Word** - used to indicate the chemical's relative level of severity of hazard. There are only two possible signal words that could be used, "Danger" and "Warning" with "Danger" being the more serious of the two.
- **Pictogram\*** - a graphical symbol used to communicate specific information about the hazards of a chemical. The HCS requires that it must be in the shape of a square set on point and include a red diamond with a black hazard symbol on a white background.

\*The pictogram applicable to propane is a flame within a diamond, similar to the Department of Transportation (DOT) transport pictogram. OSHA has stated in Appendix C.2.3.3 of the HCS that "where a pictogram required by DOT appears on a shipped container, the pictogram specified in the OSHA Hazard Communication Standard shall not appear." In other words, it is acceptable to use the DOT pictogram as OSHA's new requirements will not preempt the DOT requirements when DOT pictograms are used for shipped containers.

- **Hazard Statement** – a phrase that describes the nature of the hazard, and where appropriate, degree of hazard. The statements are specific to the hazard classification . All of the applicable statements must appear on the label, but they may also be combined where appropriate to prevent duplication.
- **Precautionary Statement** - a phrase that describes the recommended measures to be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical. There are four parts associated with a precautionary statement:
  - prevention (to minimize exposure);
  - response (in case of exposure);
  - storage; and
  - disposal.
- **Name, Address and Phone Number of Chemical Supplier** – relevant information about the chemical supplier or responsible party must be displayed on the label.

**Workplace labels** – OSHA has not changed the requirements for workplace labeling. If an employer has an in-plant or workplace system of labeling that meets the requirements in place prior to the revised HCS, it is acceptable to continue to use this system as long as it provides the employees the information on all of the health and physical hazards of the substance. Employers may also continue to use rating systems such as NFPA’s diamond (based on NFPA 704) for workplace labels as long as they are consistent with the requirements of the HCS and the employees have immediate access to the specific hazard information.

### C. Safety Data Sheets

Safety Data Sheets (SDS), formerly known as Material Safety Data Sheets (MSDSs), have a new format under the updated HCS, which now requires 16 specific sections. The main difference between the MSDS and SDS is that the new format requires sections to be in a specific order whereas the MSDS did not specify the order of the sections. In the event that a section is not applicable, the SDS must still include the section, but must state that there is no pertinent information. Further, while the SDS must include sections 12-15, OSHA will not enforce the content of these sections because they are handled by other federal agencies.

The information that is required to be on the SDS is found in 29 CFR 1910.1200. The language on the SDS must be in English, although it can include information in additional languages.

The 16 sections and the information required within them are described below:

#### 1. Identification

- a. Product Identifier
- b. Name, address, phone number of manufacturer, importer or other responsible party and emergency phone number
- c. Recommended use of chemical

## **2. Hazard(s) Identification**

- a. Hazard Classification of Chemicals
- b. Signal Word – Danger
- c. Pictograms
- d. Precautionary Statements
- e. Description of Any Hazards Not Otherwise Classified

## **3. Composition/Information on Ingredients**

- a. Substances
  - i. Chemical Name
  - ii. Common Name
  - iii. Chemical Abstract Service Number and Other Unique Identifiers
  - iv. Impurities and Stabilizing Additives
- b. Mixtures
  - i. Same information as required for substances
  - ii. Chemical name and concentration, i.e. exact percentage, of all ingredients that are classified as health hazards
  - iii. The concentration (exact percentages) of each ingredient must be specified.

## **4. First-Aid Measures**

- a. Necessary First-Aid Instructions by Relevant Routes of Exposure
- b. Description of the Most Important Symptoms or Effects, and Any Symptoms that are Acute or Delayed
- c. Recommendations for Immediate Medical Care and Special Treatment Needed

## **5. Fire-Fighting Measures**

- a. Recommendations of Suitable Extinguishing Equipment and Information about Extinguishing Equipment that is not Appropriate for a Particular Situation
- b. Advice on Specific Hazards that Develop from the Chemical During the Fire, such as any Hazardous Combustion Products Created when the Chemical Burns
- c. Recommendations on Special Protective Equipment or Precautions for Firefighters

## **6. Accidental Release Measures**

- a. Use of Personal Precautions and Protective Equipment
- b. Emergency Procedures
- c. Methods and Materials Used for Containment
- d. Cleanup Procedures

## **7. Handling and Storage**

- a. Precautions for Safe Handling
- b. Conditions of Safe Storage including Incompatibilities

## **8. Exposure Controls/Personal Protection**

- a. OSHA Permissible Exposure Limits (PELs) American Conference of Governmental Industrial Hygienists Threshold Limit Values and any other Exposure Limits
- b. Appropriate Engineering Controls
- c. Recommendations for Personal Protective Measures
- d. Specific Requirements for PPE, Protective Clothing or Respirators

## 9. Physical and Chemical Properties

- a. Appearance (physical state, color, etc.)
- b. Upper/lower flammability or explosive limits
- c. Odor
- d. Vapor pressure
- e. Odor threshold
- f. Vapor density
- g. pH
- h. Relative density
- i. Melting point/freezing point
- j. Solubility(ies)
- k. Initial boiling point and boiling range
- l. Flash point
- m. Evaporation rate
- n. Flammability (solid, gas)
- o. Partition coefficient: n-octanol/water
- p. Auto-ignition temperature
- q. Decomposition temperature, and
- r. Viscosity

## 10. Stability and Reactivity

- a. Reactivity
  - i. Description of specific set data for chemicals
- b. Chemical Stability
  - i. Indication of whether chemical is stable or unstable under normal ambient conditions while in storage and being handled
  - ii. Description of any stabilizers that may be needed
  - iii. Indication of any safety issues that may arise if there is a change in physical appearance
- c. Other
  - i. Indication of the possibility of hazardous reactions, including a statement whether the chemical will react or polymerize and description of the conditions under which hazardous reactions may occur
  - ii. List of all conditions that should be avoided
  - iii. List of all classes of incompatible materials with which chemical could react to produce a hazardous situation.
  - iv. List of any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating

## **11. Toxicological Information**

- a. Information on the likely routes of exposure
- b. Description of the delayed, immediate, or chronic effects from short- and long-term exposure
- c. The numerical measures of toxicity - the estimated amount [of a substance] expected to kill 50% of test animals in a single dose.
- d. Description of the symptoms.
- e. Indication of whether the chemical is listed in the National Toxicology Program Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer Monographs (latest editions) or found to be a potential carcinogen by OSHA

## **12. Ecological Information (non-mandatory)\***

Provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment.

## **13. Disposal Considerations (non-mandatory)\***

Provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices. This section should also refer the reader to Section 8 of the SDS.

## **14. Transport Information (non-mandatory)\***

Provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail or sea.

## **15. Regulatory Information (non-mandatory)\***

Identifies safety, health and environmental regulations specific for the product that is not indicated anywhere else on the SDS. This may include any regulations published by DOT, EPA or Consumer Product Safety Commission.

## **16. Other Information**

Indicates when the SDS was prepared or when last known revision was made.

\* Sections 12 thru 15 will not be enforced by OSHA as other federal agencies regulate this information.

Employers must ensure that SDSs are readily accessible to employees for all hazardous chemicals in the workplace. It is acceptable to make the SDS available to employees electronically as long as the employees have immediate access to the information without leaving their work area when needed and a back-up is available for quick access in case of a power outage. If an employer does not have an SDS, the employer should contact the chemical supplier to obtain one.

#### **IV. TRAINING**

To facilitate a better understanding of the new system, the new HCS requires that workers be trained by December 1, 2013 on the new label elements and safety data sheet format.

The list below contains the minimum required topics for training that must be completed by December 1, 2013.

1. Training on label elements must include information on the following:
  - a. Type of information the employee would expect to see on the new labels including the *product identifier; signal word; pictogram; hazard statement(s); precautionary statement(s); name, address and phone number of chemical supplier.*
  - b. How an employee might use the labels in the workplace. For example, employees should know how to store hazardous materials and understand the label well enough to know where to look for first aid information.
  - c. A general understanding of how the elements work together on a label. For example, employees must understand the different pictograms and that multiple pictograms can represent multiple hazards on a single label.
  
2. Training on the format of the SDS must include information on:
  - a. Standardized 16-section format, including the type of information found in the various sections.
  - b. How the information on the label is related to the SDS. For example, the precautionary statements on the SDS must be identical to the statements on the label.

#### **V. ADDITIONAL RESOURCES**

There are additional resources on the revised Hazard Communication Standard available on OSHA's website at <https://www.osha.gov/dsg/hazcom/index.html>. This includes access to items such as Fact Sheets, Quick Cards, a Side-by-Side comparison of previous requirements versus new ones as well as a copy of the Final Rule.

## VI. COMPLIANCE DATES

The following table provides HCS milestone compliance dates:

<b>Effective Completion Date</b>	<b>Requirement(s)</b>	<b>Who</b>
<b>December 1, 2013</b>	Train employees on the new label elements and SDS format.	Employers
<b>June 1, 2015</b> <b>December 1, 2015</b>	Comply with all modified provisions of this final rule, except:  Distributors may ship products labeled by manufacturers under the old system until December 1, 2015.	Chemical manufacturers, importers, distributors and employers
<b>June 1, 2016</b>	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.	Employers
<b>Transition Period</b>	Comply with either 29 CFR 1910.1200 (this final standard), or the current standard, or both.	All chemical manufacturers, importers, distributors and employers

## Sample Propane Industry Label

Based on past available information, the data below show what the responses to the applicable requirements for the new labels might be as they apply to propane. An actual sample label is shown on the next page based on this data. Note that this is for illustrative purposes only. You should consult your chemical supplier for the most up to date information.

*Product Identifier:* Propane

*Hazard Classification:*

- Skin corrosion/irritation
- Eye damage/irritation
- Simple asphyxiant
- Flammable gas

*Pictogram:*



*Signal Word:* “Danger”

*Hazard statements:*

- “Causes severe skin burns and eye damage”
- “Causes serious eye damage”
- “May displace oxygen and cause rapid suffocation”
- “Extremely flammable gas”

*Precautionary statement:*

- Prevention:
  - “Wear protective gloves/protective clothing/eye protection”
  - “Keep away from heat/sparks/open flames/ hot surfaces – No smoking.”
- Response:
  - IF ON SKIN: Liquid propane can cause freezing of tissue. Remove contaminated clothing. Immerse affected area in lukewarm water not exceeding 105<sup>0</sup> F. Keep immersed. Get prompt medical attention.
  - IF IN EYES: Liquid propane can cause freezing of tissue. Gently flush eyes with lukewarm water. Obtain medical attention immediately.
  - IF INHALED: Remove person to fresh air immediately.
  - Leaking gas fire: Do not extinguish unless leak can be stopped safely. Eliminate all sources of ignition if safe to do so.
- Storage: Store in well-ventilated place.

## **PROPANE**



### **DANGER**

Extremely flammable gas. Keep away from heat/sparks/open flames/ hot surfaces – No smoking. Leaking gas fire: Do not extinguish unless leak can be stopped safely. Eliminate all sources of ignition if safe to do so.

May displace oxygen and cause rapid suffocation. Store in well-ventilated place.

If exposed to liquid propane, causes severe skin burns and serious eye damage. Wear protective gloves/protective clothing/eye protection.

**IF ON SKIN:** Liquid propane can cause freezing of tissue. Remove contaminated clothing. Immerse affected area in lukewarm water not exceeding 105°F. Keep immersed. Get prompt medical attention.

**IF IN EYES:** Liquid propane can cause freezing of tissue. Gently flush eyes with lukewarm water. Obtain medical attention immediately.

**IF INHALED:** Remove person to fresh air immediately.