



# *Water Talk*

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## *Material Safety Data Sheets & GHS Changes*

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A Material Safety Data Sheet (MSDS) is designed to provide both workers and emergency personnel with the proper procedures for handling or working with a particular substance. MSDS's include information such as physical data, toxicity, health effects, first aid, reactivity, storage, disposal, personal equipment, and spill/leak procedures. MSDS's can vary in length depending on their format, content and font size.

MSDS's are provided for:

- Employees who may be occupationally exposed to a hazard at work
- Employers who need to know the proper methods for storage, etc.
- Emergency responders such as fire fighters, hazardous material crews, emergency medical technicians, and emergency room personnel.

### **Where to find MSDS's:**

- Your laboratory or workplace
- Most universities and businesses
- From the distributor that sold you the material
- Free online resources such as <http://www.msds haz com com/>
- Software that you can purchase

### **What is required on an MSDS?**

Presently, it depends on where you live because each area has their own rules and regulations. For the United States, OSHA requires specific things and recommends using the American National Standard Institute (ANSI) format which adds a few more sections in toxicology than the OSHA requirements. The Hazard Communication Standard (HCS) specifies the required elements that must be on an MSDS among other important data.

According to Appendix B of OSHA standard 1910.1200, subpart Z (Hazard determination: mandatory):

*The quality of a hazard communication program is largely dependent upon the adequacy and accuracy of the hazard determination. The hazard determination requirement of this standard is performance-oriented. Chemical manufacturers, importers, and employers evaluating chemicals are not required to follow any specific methods for determining hazards, but they must be able to demonstrate that they have adequately ascertained the hazards of the chemicals produced or imported in accordance with the criteria set for in this appendix.*

### **As a distributor, can we change the name and address on an MSDS?**

A distributor or manufacturer may change the name and address information on the MSDS, however, by doing so they assume important legal responsibilities. OSHA expects the emergency contact to be able to provide information beyond that already contained in the sheet:

*...in all cases, the party listed must be able to provide additional information on the hazardous chemicals, or clarification of the information on the MSDS, as well as, additional emergency procedures, if necessary, in lieu of the manufacturer.*

### **How to read an MSDS**

The ANSI and CMA 16-section MSDS formats exceeds OSHA requirements and are divided into four major areas, each designed to answer a specific question.

The NFPA code is a numerical code established by the National Fire Protection Association. It rates the substance under fire conditions in four categories: health, flammability, reactivity and unusual reactivity; 4 is a severe hazard and 0 is no hazard.

### **What is the material and what do I need to know immediately in an emergency?**

Sections 1-3.

- 1) Chemical Name: It is important that the chemical name and label match the name on the MSDS.
- 2) Composition, information on ingredients: The CAS # is the single identifying number of each specific substance.
- 3) Hazards identification: The most important section! The first part describes the material's appearance. If it doesn't look like this, STOP! Do not use it; it may be more or less hazardous. The second part provides an overview of the most significant and immediate concern when using this material. It will include reactivity, adverse health effects, and flammability information.

### **What should I do if a hazardous situation occurs?**

Sections 4-6

- 4) First aid measures: Seek medical attention. These first-aid measures are only meant for immediate first aid and should always be followed up with professional medical care.
- 5) Fire fighting measures: This section is written for the firefighter. Flash point (the lowest temperature at which enough vapor is present to form an ignitable mixture with air); upper and lower flammable limits; and the auto ignition temperature are common properties included in this section.
- 6) Accidental Release measures: How to clean up a spill. Always remove unprotected personnel from area and make sure all people are safe. Contain the spill with sand or absorbent materials.

### **How can I prevent hazardous situations from occurring?**

Sections 7-11.

- 7) Handling and Storage tips.
- 8) Exposure controls, personal protection. Wear personal protective equipment such as goggles, gloves and apron.
- 9) Physical and chemical properties. Clear, concise, and useful physical and chemical properties help you learn more about the chemicals you use. Formula and formula weight are also useful for making solutions.

- 10) Stability and reactivity. Describes the conditions or reactions to be avoided. Also provides some indication about anticipated shelf life.
- 11) Toxicological information. More detail on how the material may injure you. Acute (short exposure) and chronic (long-term) effects are listed along with their target organs. Oral (ORL), inhalation (IHL), and skin absorption (SKN) toxicity data on test animals is included.

#### **Other useful information**

- 12) Ecological information. Ecological impact if large amounts of the chemical spill near a river or lake.
- 13) Suggested disposal methods for disposing laboratory quantities of chemicals.
- 14) Department of Transportation shipping information included for your emergency responders and transport/shipping departments.
- 15) Regulatory information used by regulatory compliance personnel.
- 16) Other information.

#### References:

Glossary Table of Contents <http://www.ilpi.com/msds/ref/index.html>

#### **GHS and upcoming changes**

The Globally Harmonized System of Classification and Labeling of Chemicals (GHS) is a system for standardizing and harmonizing the classification and labeling of chemicals. It is an attempt to:

- Define health, physical and environmental hazards of chemicals
- Create a classification process that provides available data on chemicals for comparison with the defined hazard criteria
- Communicating hazard information on labels and Safety Data Sheets (SDS)

The basic goal of hazard communication is to ensure that employers, employees and the public are provided with adequate, practical, reliable and comprehensible information on the hazards of chemicals so that they can take effective preventative and protective measures for their health and safety. GHS covers all hazardous chemicals. The proposed OSHA revisions include changes to the MSDS and the

authoring, publishing, distribution, and management of labels. The proposal also includes revised criteria for the classification of hazardous chemicals, as well as changes to definitions and terms used in the standards and new training requirements for employees. When the final rule is promulgated, companies will face many challenges, including re-evaluating how their substances and mixtures are classified, reissuing MSDS's and labels, and training staff.

To gain a better understanding of the building block approach, the needs and regulations of the various sectors are detailed below:

#### **Transport:**

- GHS physical, acute and environmental hazard criteria are expected to be adopted in the transport sector
- Containers of dangerous goods will have pictograms that address acute toxicity, physical hazards, and environmental hazards.
- GHS hazard communication elements such as signal words, hazard statements and SDS are not expected to be adopted in the transport sector.

#### **Workplace**

- GHS physical and health hazard criteria, as appropriate
- Labels that have harmonized core information under the GHS (Signal words, hazard statements and symbols)
- Safety Data Sheets
- Employee training to help ensure effective communication is also anticipated

#### **Consumer**

- The appropriate GHS hazard criteria are expected to be adopted
- These labels will include the core elements of GHS (signal words, hazard statements, and symbols etc) subject to some sector-specific considerations in certain systems (e.g., risk-based labeling)

#### **Pesticides**

- The appropriate GHS hazard criteria are expected to be adopted
- Pesticide labels will include the core elements of the GHS, subject to some sector-specific considerations in certain systems

### **The timeline**

OSHA estimates a minimum of 18 months from the Notice of Proposed Rulemaking before the final rule is promulgated. Companies will have 3 years from promulgation to come into compliance with the final rule and 2 years to implement training requirements. Once the rule is final, companies can begin implementation.

There are 26 states with their own OSHA-approved plans, including California. These states will have 6 months from promulgation to adopt comparable provisions of the final standard. In the meantime, each individual State Plan will remain in effect until it adopts the required revisions.

If everything proceeds as planned, companies doing business within the U.S. will be allowed to issue MSDS's and labels no earlier than July 2011, and all existing MSDS's and labels would have to be updated in accordance with the new requirements no later than July 2014. However, business dealing in the European market have to be in line with EU GHS implementation no later than December 2010 for pure substances and June 2015 for mixtures.

### **Simplifying Conformance**

Companies can do several things now to prepare for OSHA's promulgation of the final rule, including taking stock of existing compliance tools and associated chemical regulatory information to ensure that the proposed requirements are addressed. Companies may also choose to employ outsourced services for their GHS classification of substances and mixtures as a separate service and/or as part of the outsourcing MSDS and label authoring.

For more information visit <http://www.osha.gov/dsg/hazcom/ghs.html>