Product Responsibility Best Practices

**SUBJECT**
Safety Data Sheets (SDS) and Globally Harmonized System (GHS) of Classification and Labeling

**LAST UPDATE**
July 2018

**APPLIES TO**
- Suppliers
- Distributors

**FOCUS ON**
Defining the Globally Harmonized System (GHS) of classification and labeling of chemicals, a safety data sheet (SDS), the purpose of a SDS, and how it is intended to be used

**QUICK LINKS**
- PPAI Corporate Responsibility: www.ppai.org/corporate-responsibility/
- UL: http://industries.ul.com/premiums-promotional-and-licensed-goods
- Consumer Product Safety Commission: www.cpsc.gov

**Intended for intermediate compliance programs**

*Italic grey text indicates a hyperlink listed in the Online Resources section of this document.*

## Introduction To Safety Data Sheets (SDS)

*Safety Data Sheets (SDS)* typically refer to the documentation of chemical substances in specific products. This includes providing detailed information as to the hazards and specific safety precautions to take when handling the product. Their purpose is to protect the environment and protect workers.

The primary function of an SDS is to provide information about product chemical hazards, both human and environmental, and safety precautions for handling the product. Previously, in the United States and Canada, the SDS was referred to as MSDS. It is a document that communicates physical, health, and safety hazards of chemicals. The reason behind the change from MSDS to SDS was to minimize miscommunication and confusion, as each country had its own way of communicating hazards. With the inception of the Globally Harmonized System (GHS), the SDS was established and became an essential component of GHS by providing comprehensive details about chemical management of substances or mixtures used in the workplace in which workers were given the *'right-to-understand'.*

## Globally Harmonized System (GHS) of Classification and Labeling of Chemicals

In an attempt to bring consistency to chemical regulations and standards of different countries the *United Nations (UN)* developed the *Globally Harmonized System (GHS)* of Classification and Labeling of Chemicals. In short the GHS is an international program intended to bring consensus for classifying and labeling hazardous chemicals by ensuring the safe manufacturing, handling, use, disposal, and transport of hazardous materials through the use of currently available data. The hope was that every country would incorporate the principles of the GHS into their own chemical management systems. In addition to making workplace conditions safer for those exposed to chemical hazards, GHS should make the international sale and transportation of hazardous chemicals easier.
Note that GHS is currently a standard and not a law or regulation in and of itself. Each country is able to choose the elements of the GHS it wishes to incorporate into its own laws and regulations. Thus, each country is solely responsible for enforcement of the tenets it adopts. To date, more than 65 countries have adopted or are in the process of adopting GHS.

- The United States (U.S.) adopted portions of GHS as part of the *OSHA Hazard Communication Standard (HCS) 2012*. GHS is a workplace-based regulation which means that the *Occupational Safety &Health Administration (OSHA)* enforces it at the workplace level.

Theoretically, the GHS approach to defining and classifying hazards provides an advantage when compared to the previous way of managing chemicals in which each country had its own key words, symbols and way of classifying hazards.

Within each hazard class there are specific hazard categories based on the level of hazard. Since OSHA is a workplace law and does not govern environmental issues, there are areas of GHS that are the responsibility of the *Environmental Protection Agency (EPA).* These are covered under the *Superfund Amendments and Reauthorization Act (SARA)* which required the EPA to revise the *Hazard Ranking System (HRS)* in an effort to assess the degree of risk posed by "uncontrolled hazardous waste sites" to humans and the environment.

**Elements of the GHS:**
- Defines health, physical and environmental hazards
- Establishes classification processes using available public data
- Establishes a common hazard communication method
- Explains how to apply the system
- Supplies building blocks for countries to develop their own laws

## Standardized Label Elements

Based on the definitions, if something gets assigned to a certain hazard class and hazard category, the GHS purple book defines the language specific to that chemical. Labeling, safety data sheets, and symbols, based on the GHS classification criteria were developed as part of the harmonized hazard communication system. This includes signal words (i.e. danger or warning), hazard phrases, hazard pictograms (symbols with a border), and precautionary phrases (i.e. personal protective equipment needed and how to avoid exposure). There are critical pieces of communication that tell us the potential hazards during use.

| Health Hazards | Flame | Exclamation Mark |
|---|---|---|
|  |  |  |
| • Carcinogen<br>• Mutagenicity<br>• Reproductive Toxicity<br>• Respiratory Sensitizer<br>• Target Organ Toxicity<br>• Aspiration Toxicity | • Flammables<br>• Pyrophorics<br>• Self-Heating<br>• Emits Flammable Gas<br>• Self-reactives<br>• Organic Peroxides | • Irritant (skin and eye)<br>• Skin Sensitizer<br>• Acute Toxicity (harmful)<br>• Narcotic Effects<br>• Respiratory Tract Irritant<br>• Hazardous to Ozone Layer (Non-Mandaroty) |
| **Gas Cylinder** | **Corrosion** | **Exploding Bomb** |
|  |  |  |
| •Gases Under Pressure | • Skin Corrosion/Burns<br>• Eye Damage<br>• Corrisve to Metals | • Explosives<br>• Self-Reactives<br>• Organic Peroxides |
| **Flame Over Circle** | **Environment** | **Skull** |
|  |  |  |
| • Oxidizers | • Aquatic Toxicity | • Acute Toxicity (Fatal or Toxic) |

## Safety Data Sheets (SDS)

### What SDS Will And Will Not Do?

There is often confusion about SDS and how it is to be used by industry. Often suppliers will provide distributors with a copy of an SDS when the distributor is asking for a test report. In order to alleviate confusion, it is important to understand the function of an SDS versus other type of documentation used throughout our industry.

**An SDS will:**

- Tell us the potential hazards of a chemical contained within a product
- Tell us how to protect ourselves when using the product
- Tell employers and employees what may need to be reported to the government
- Provide guidance on how to ship and dispose of chemicals

**An SDS will NOT:**

- Serve the same function as a test report
- Identify the standard by which the known chemical was tested
- Serve the same function as a certificate of conformity
- Be accepted by any federal, state or local regulator as proof of compliance with standards

It is important that those in the promotional products industry understand the difference between a SDS and a test report or certificate of conformity. Failure to do so opens the door for injuries to end users, breach of law, civil penalties, and brand damage.

The entity creating the SDS would be responsible for determining if its product or the components within the product meet the criteria to be defined as hazardous. “The concept of risk or the likelihood of harm occurring, and subsequently communication of that information, is introduced when exposure is considered in conjunction with the data regarding potential hazards. The basic approach to risk assessment is characterized by the simple formula: hazard x exposure = risk”- *GHS Fifth revised edition.*

### SDS Regulators

In the U.S. the *Occupational Safety and Health Administration (OSHA)* is the government agency responsible for enforcing the Hazard Communication Standard (HCS) *29 CFR 1910.1200 for SDS*. This standard specifies the required elements of an SDS in addition to other data.

While GHS was intended to provide a standard model for the actual implementation still varies by country. It is recommended to consult with the *appropriate authorities in each country* where applicable.

### Requirements

B2B: Hazard information must be shared with business customers in the form of an SDS at the time of first shipment of a particular product and with employees that interact with the product. In addition, SDSs must be updated by the chemical manufacturer or importer within three months of learning of “new or significant information” regarding the potential hazard associated with the chemical.

B2C: Consumers are not legally required to be provided with an SDS but an organization is legally required to provide them with one if they request it.

| Required to Provide SDS | Need an SDS |
|---|---|
| Manufacturers | Employers |
| Importers | Workers |
| Suppliers | Shippers |
| Distributors | Retailers |

| Required to Provide SDS | Need an SDS |
|---|---|
| Employers | Consumers |
| | Anyone that asks to see one |

### Standardized SDS Format

GHS standardized the SDS format by providing specifically what information must be provided. An SDS can contain additional data but never less than what is required.

1: Identification tells what the chemical is, the recommended uses, and provides supplier contact information.

2: Hazard(s) identification details the hazards presented by the chemical, associated warnings, and precautionary statements.

3: Composition/information on ingredients communicates what is contained in the product (i.e. chemical names, common names, synonyms, impurities, stabilizing additives, unique identifiers like the Chemical Abstracts Service (CAS) number, mixtures, concentrations, batch-to-batch variations and trade secret statements).

4: First-aid measures explain how untrained individuals should respond when someone has been exposed to the chemical.

5: Fire-fighting measures detail appropriate actions for extinguishing fires caused by the chemical inclusive of proper equipment, protective equipment, and hazards associated with burns caused by the chemical.

6: Accidental release measures provide guidance for dealing with and containing spills, leaks, or releases broken down by size of spill (small or large), cleanup directions, and ways to mitigate exposure.

7: Handling and storage guidelines recommend the optimum conditions for safe storage and handling.

8: Exposure control/personal protection indicates exposure limits, engineering controls, and personal protective measures that minimize exposure to hazards.

9: Physical and chemical properties identify details regarding appearance, odor, varying densities, flash points, evaporation rates, flammability, and much more.

10: Stability and Reactivity is broken into three parts and addresses reactivity hazards, stability of the chemical, and other possibilities of hazardous reactions.

11: Toxicological information explains health effects based on types of exposure (ingestion, inhalation, skin, or eye) and symptoms associated with exposure.

12: Ecological information is a non-mandatory section that provides information related to the environmental of chemical release.

13: Disposal considerations is a non-mandatory section that recommends proper best practices of disposal inclusive of recycling or reclamation.

14: Transport information is a non-mandatory section related to shipping and transporting classifications whether by air, sea, rail, or land.

15: Regulatory information is a non-mandatory section that identifies safety, health, and environmental regulations not otherwise previously indicated on the SDS.

16: Other information pertains to when the SDS were prepared, when revisions and changes were made and any additional, pertinent information not already included in the SDS

### DO-IT-YOURSELF SDS

The *UL WERCSmart Do-It-Yourself SDS (Safety Data Sheet) authoring tool* is an automated OSHA-compliant SDS authoring solution for the small to mid-size company that produces chemical-containing products.

## *Online Resources*

**PPAI Product Responsibility:**
ppai.org/corporate-responsibility/product-responsibility/

**Safety Data Sheets (SDS):** www.osha.gov/Publications/OSHA3514.html

**Globally Harmonized System (GHS):**
www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html

**OSHA HCS 2012:**
www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10099

**OSHA Fact Sheet:** *https://www.osha.gov/dsg/hazcom/HCSFactsheet.html*

**Side-by-Side Comparison of HCS 1994 to HCS 2012:**
www.osha.gov/dsg/hazcom/side-by-side.html

**UL Do-It-Yourself SDS Tool:** www.ulghs.com/

**GHS (sixth revised edition):**
www.unece.org/trans/danger/publi/ghs/ghs_rev06/06files_e.html

**GHS Implementation by Country:**
www.unece.org/trans/danger/publi/ghs/implementation_e.html

**European Union Classification and Labelling (CLP/GHS) Considerations:**
ec.europa.eu/growth/sectors/chemicals/classification-labelling/index_en.html

**Canada WHMIS 2015:**
www.hc-sc.gc.ca/ewh-semt/occup-travail/whmis-simdut/ghs-sgh/index-eng.php

**The Superfund Amendments and Reauthorization Act (SARA):**
www.epa.gov/superfund/superfund-amendments-and-reauthorization-act-sara

**EPA Hazard Ranking System:** semspub.epa.gov/work/11/189159.pdf

**The UL WERCSmart Do-It-Yourself SDS (Safety Data Sheet) Authoring Tool:** http://www.ulghs.com/

PRODUCT™ RESPONSIBILITY
POWERED BY PPAI