

## Understanding the New “Safety Data Sheets” (SDS)

Over the last year the Chemical Safety Office has been spreading the word on changes in how hazard information is communicated by chemical manufacturers to end-users (see our article “*The New Globally Harmonized System (GHS): Changes to the Hazard Communication Standard*”). This is all due to the 2012 changes in OSHA’s Hazard Communication Standard. The Hazard Communication Standard was aligned with the United Nations Globally Harmonized System of Classification and Labeling of Chemicals or GHS. One component of the modified regulations is a simple name change for the chemical information sheets you receive from the chemical manufacturer. What was once called a Material Safety Data Sheets or MSDS is now called a Safety Data Sheets or SDS.

While change can sometimes be difficult or annoying there are a number of key benefits to GHS. The chemical information will now be more consistent between manufacturers and the format is designed to be more user-friendly with 16 distinct sections. So now the way the information is presented and the location on the safety data sheet will be the same for all materials. Hazard information will always in Section 2, and the use of standard pictograms and hazard statements makes it easier to understand the physical and health dangers once you get familiar with the changes. This article provides guidance to help workers who handle hazardous chemicals to become familiar with the format and understand the contents of the SDS.

By June 1, 2015 all manufacturers must convert to the new format, though many have already done so. When a newly-formatted SDS’s comes in you should change out the old version that you may have in your binders or on your computer/network, **Retain the old MSDS in an archive file**. The information contained in the SDS must be in English although it may be in other languages as well. In addition, OSHA requires that SDS preparers provide specific minimum information as detailed in Appendix D of the Hazard Communication Standard. A description of all 16 sections of the SDS, along with their contents, is presented below:

### Section 1

This section identifies the chemical as well as recommended uses. It also provides the essential contact information of the manufacturer. The required information consists of:

- Product identifier on the label or any other names or synonyms.
- Name, address and phone number of the manufacturer, importer or other responsible party and emergency number.
- Recommended use of the chemical and any restrictions on use.

### Section 2

This section identifies the hazards of the chemical and the appropriate warning information associated with those hazards. The required information consists of:

- Hazard classification of the chemical such as flammable liquid, etc.
- Signal word.

- Hazard statements.
- Pictograms.
- Precautionary statements.
- Description of any hazard not otherwise classified.
- For a mixture that contains an ingredient with an unknown toxicity, a statement describing what percentage of the mixture consists of the ingredient with unknown acute toxicity.

### Section 3

This section identifies the ingredients contained in the product including impurities and stabilizing additives. This section includes information on substances, mixtures and all chemicals where a trade secret is claimed. The required information consists of:

#### Substances

- Chemical name.
- Common name and synonyms.
- Chemical Abstract Service (CAS) number and other unique identifiers.
- Impurities and stabilizing additives.

#### Mixtures

- Same information required for substances.
- The chemical name and concentration (percentages) of all ingredients which are classified as hazardous and are present above their cut off or concentration limits and present a health risk below the cut off or concentration limits.
- The concentration or percentages of each ingredient must be specified.

#### Trade Secret Claimed

- A statement that the specific chemical identity and or exact percentage or concentration of the composition has been withheld as a trade secret.

### Section 4

This section describes the initial care that should be given by untrained responders to an individual who has been exposed. The required information consists of:

- Necessary first aid instructions by relevant routes of entry such as inhalation, ingestion, etc.
- Description of the most important symptoms or effects whether acute or chronic.
- Recommendations for immediate medical care and special treatment needed.

### Section 5

This section provides recommendations for fighting a fire caused by the chemical. The required information consists of:

- Recommendations on extinguishing equipment and PPE for firefighters.

- Advice on specific hazards that can develop during the chemical fire such as hazardous combustion products.

### Section 6

This section provides recommendations on the appropriate response to spills, leaks or Releases including containment and clean up practices. The required information consists of:

- Emergency procedures including instructions on evacuations.
- Methods and materials for containment.
- Clean up procedures such as decontamination and absorbent materials.

### Section 7

This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- Recommendations on the conditions for safe storage, including incompatibilities.
- Precautions for safe handling, minimizing release and general hygiene practices.

### Section 8

This section provides the exposure limits, engineering controls, and PPE. The required information consists of:

- OSHA Permissible Limits (PEL), ACGIH Threshold Limit Values (TLV), etc.
- Appropriate engineering controls such as local exhaust ventilation.
- Recommendations for protective measures to prevent illness or injury from exposure.
- Any special requirements for PPE, clothing or respirators.

### Section 9

This section identifies the physical and chemical properties of the substance or mixture. The minimum required information consists of:

- Appearance, upper/lower flammability limits, odor, appearance, vapor pressure.
- Odor threshold, vapor density, pH, relative density, melting/freezing point, flash point.
- Solubility, boiling point/range, evaporation rate, flammability.

## Section 10

There are three parts to this section: reactivity, stability and other hazards. The required information consists of:

### Reactivity

- Description of the specific test data for the chemical. Can be for a class or family.

### Chemical Stability

- Indications whether the chemical is stable/unstable under ambient temperature.
- Conditions for storage.
- Stabilizers needed to maintain stability.

### Other

- Conditions under which hazardous reactions occur.
- List of conditions to avoid such as shock, vibrations, etc.
- List of all incompatible materials.
- List of any known or anticipated hazardous decomposition products.

## Section 11

This section identifies toxicological and health effects information. The required information consists of:

- Information on the likely routes of entry.
- Description of the delayed, immediate or chronic effects.
- The numerical measures of toxicity.
- Description of symptoms of exposure.
- Indication if the chemical is listed in the NTP, IARC or OSHA.

## Section 12

This section provides information on the environmental impact of the chemical if released to the environment. The information may include:

- Data from toxicity tests performed on aquatic or terrestrial organisms.
- Whether there is a potential for the chemical to persist in the environment.
- Results of bioaccumulation potential.
- The potential for the chemical to move from soil to groundwater.

## Section 13

This section provides guidance on proper disposal practices, recycling or reclamation of the chemical and its container. The information may include:

- Description of appropriate disposal containers and methods to use.
- Description of physical and chemical properties that may affect disposal.
- Language discouraging sewer disposal.

#### **Section 14**

This section provides shipping and transportation information via air, rail, sea or road. The information may include:

- UN number, UN shipping name, transport hazard class and packing group number.
- Guidance on transport in bulk.

#### **Section 15**

This section provides the safety, health and environmental information that are not indicated anywhere else on the SDS.

#### **Section 16**

This section provides the date of preparation or when the last known revisions were made.

Check out another article in this newsletter titled, “How to Locate Chemical Hazard Information” for more chemical hazard references.

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