Material Safety Data Sheets

... now called

Safety Data Sheets
In March 2012, OSHA Standard 29 CFR 1910.1200 (the Hazard Communication Standard) was revised to incorporate the “Globally Harmonized System (GHS)”

- The GHS focus is harmonizing worldwide criteria for classification of chemical hazards and communication through labels and Safety Data Sheets (SDS)
- This is intended to improve understanding of hazard information on product labels and SDS

The goal is to:
- Identify intrinsic hazards in chemical substances and mixtures
- Convey hazard information to users
- More effectively prevent injuries and illnesses and save lives
Major changes to the Hazard Communication Standard

**Hazard classification:** Provides specific criteria for classification of health and physical hazards, as well as classification of mixtures.

**Labels:** Chemical manufacturers and importers are required to provide a label that includes a harmonized *signal word*, *pictogram*, and hazard statement for each hazard class and category. Precautionary statements must also be provided.

**Safety Data Sheets:** Now have a specified 16-section format.

**Information and training:** Employers are required to train workers on the new labels elements and safety data sheets format to facilitate recognition and understanding.
NEW HAZARD COMMUNICATION STANDARD

▪ **Signal Word**: a word used to indicate the relative severity of a hazard and to alert the reader to a potential hazard:
  ▪ *Danger* for more severe hazards, and
  ▪ *Warning* for less severe hazards

▪ **Pictograms**: symbols, on a white background with a red diamond border, that are intended to convey specific information about the hazards of a chemical.
PICTOGRAMS

**Health Hazard**
- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

**Flame**
- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides

**Corrosion**
- Skin Corrosion/Burns
- Eye Damage
- Corrosive to Metals

**Exploding Bomb**
- Explosives
- Self-Reactives
- Organic Peroxides

**Gas Cylinder**
- Gases Under Pressure

**Flame Over Circle**
- Oxidizers

**Skull & Crossbones**
- Acute Toxicity (fatal or toxic)

**Environment**
(Non-Mandatory)
- Aquatic Toxicity

**Warning Symbol**
- Irritant (skin & eye)
- Skin Sensitizer
- Acute Toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritation
Hazard Classification

- Three main types of hazard are defined:
  - Health Hazard
  - Physical Hazard
  - Environmental Hazard

- Each is divided into Hazard Classes
  - The Health Hazard includes oral toxicity, carcinogen, skin corrosion or irritation, allergen
  - The Physical Class includes explosives, flammables, pressurized containers
  - Environmental Hazard includes toxicity to aquatic life (acute & chronic), destruction of the ozone layer

- Hazard Classes are subdivided into Categories with Category 1 having the most severe hazard effect
Example: The Health Hazard Class

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category 1</th>
<th>Category 2</th>
<th>Category 3</th>
<th>Category 4</th>
<th>Category 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD$_{50}$ (mg/kg)</td>
<td>$\leq 5$</td>
<td>$&gt; 5 - \leq 50$</td>
<td>$&gt; 50 - \leq 300$</td>
<td>$&gt; 300 - \leq 2000$</td>
<td>$&gt; 2000 - 5000$</td>
</tr>
<tr>
<td>Pictogram</td>
<td><img src="skull.png" alt="Skull and Bones" /></td>
<td><img src="skull.png" alt="Skull and Bones" /></td>
<td><img src="skull.png" alt="Skull and Bones" /></td>
<td><img src="exclamation.png" alt="Exclamation" /></td>
<td>None</td>
</tr>
<tr>
<td>Signal Word</td>
<td>Danger</td>
<td>Danger</td>
<td>Danger</td>
<td>Warning</td>
<td>Warning</td>
</tr>
<tr>
<td>Hazard Statement</td>
<td>Fatal if swallowed</td>
<td>Fatal if swallowed</td>
<td>Toxic if swallowed</td>
<td>Harmful if swallowed</td>
<td>May be harmful if swallowed</td>
</tr>
</tbody>
</table>

This table shows the Acute Oral Toxicity Health Hazard Class with Hazard Categories 1 through 5, the corresponding LD$_{50}$, the pictogram, the Signal Word and the Hazard Statement.
Safety Data Sheet Elements contain . . .

- Standardized pictograms, hazard statements, signal words, and precautionary statements
- Recommended use of the chemical/material
- Restrictions on use
- Exact percentages of ingredients are required in most cases (some may give ranges)
- Conditions to avoid, and hazardous decomposition products
Example: Safety Data Sheet for Purell

- Hand Sanitizer is a personal care product.
- It is safe for consumers . . . under normal use.
- A SDS is not required for the consumer.
- But in the VA workplace, a SDS must be present where these materials are used (offices, labs, etc.).
- The SDS shows that Purell is flammable (between >50-70% ethanol & 1-5% isopropanol) and a serious eye irritant.
- Keep away from sparks, flames.
- The Signal Word is **Warning**.
SAFETY DATA SHEET

PURELL® Advanced Instant Hand Sanitizer

Version Revision Date: MSDS Number: Date of last issue: 12/12/2014
1.1 02/10/2015 36762-00002 Date of first issue: 12/12/2014

SECTION 1. IDENTIFICATION

Product name : PURELL® Advanced Instant Hand Sanitizer

Manufacturer or supplier's details
Company name of supplier : GOJO Industries, Inc.
Address : One GOJO Plaza, Suite 500
           Akron OH 44311
Telephone : 1 (330) 255-6000
Emergency telephone : 1-800-424-9300 CHEMTREC

Recommended use of the chemical and restrictions on use
Recommended use : Hand Sanitizer
Restrictions on use : This is a personal care or cosmetic product that is safe for
consumers and other users under normal and reasonably
foreseeable use. Cosmetics and consumer products,
specifically defined by regulations around the world, are
exempt from the requirement of an SDS for the consumer.
While this material is not considered hazardous, this SDS
contains valuable information critical to the safe handling and
proper use of the product for industrial workplace conditions
as well as unusual and unintended exposures such as large
spills. This SDS should be retained and available for
employees and other users of this product. For specific
intended-use guidance, please refer to the information
provided on the package or instruction sheet.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Flammable liquids : Category 3
Eye irritation : Category 2A

GHS Label element
Hazard pictograms : 

Signal Word : Warning
Hazard Statements : H226 Flammable liquid and vapor.
H319 Causes serious eye irritation.
To locate a SDS using VA computers

CEOSH Webpage
http://vaww.ceosh.med.va.gov/ceosh/MSDS.shtml

Click on SDS Search
Enter the chemical (e.g., picric acid) or product under *Search for* and click on *Search*.
The following pages show product, manufacturers and “Action”

<table>
<thead>
<tr>
<th>Action</th>
<th>Product Name</th>
<th>Manufacturer Name</th>
<th>Mfg Part #</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Picric Acid</td>
<td>Sigma Aldrich Chemical Company Inc. / 239801 SAFC</td>
<td>Bose E367-1 573</td>
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<td></td>
<td>Picric Acid</td>
<td>Sigma Aldrich Chemical Company Inc. / 80452 SAFC</td>
<td>Department of Veterans Affairs</td>
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<td>Picric Acid</td>
<td>Sigma Aldrich Chemical Company Inc. / 80452 SAFC</td>
<td>(B114) Room 230 691</td>
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<td>Waxman 689</td>
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<tr>
<td></td>
<td>Picric Acid / Acetone</td>
<td>American Mastertech Scientific Incorporated</td>
<td>SSSTPAA</td>
<td>Department of Veterans Affairs</td>
</tr>
</tbody>
</table>
Click on “Action” to view a number of available options, including “View SDS”
More information on SDSs can be found here:

HazCom Webpage

http://www.osha.gov/dsg/hazcom/index/html