Safety Data Sheets

- Formerly MSDS
- Required by OSHA in the Hazard Communication Standard (HCS) – not effective until June 1, 2015
- Standardized sections (compared to MSDS) – 16 of them
- Used to communicate hazards
Major Changes/Impact of GHS

> Section 2 of the SDS
• 9 pictograms that visually describe hazards
• 2 signal words (danger and warning) that describe the hazards
• 72 individual and 17 combined precautionary statements
• Click [here](#) for a handout of the GHS Pictograms
Signal Words

• Two signal words; used to indicate the relative level of severity of the hazard:
  – Danger
  – Warning

• Danger indicates a more serious hazard than warning
Hazard/precautionary statements

• Click here to see how signal words, pictograms, hazard statements, and precautionary statements come together for each hazard class
SDS Section Titles

1. Identification
2. Hazard(s) identification
3. Composition/information on ingredients
4. First-aid measures
5. Fire-fighting measures
6. Accidental release measures
7. Handling and storage
SDS Section Titles

8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information
The Major Change in SDSs

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Target Organ Effect, Harmful by ingestion, Harmful by skin absorption, Irritant

Target Organs
Central nervous system, Liver, Kidney, Blood, Lungs

GHS Classification
Flammable liquids (Category 2)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Skin irritation (Category 3)
Serious eye damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H302 + H312 Harmful if swallowed or in contact with skin
H316 Causes mild skin irritation.
H319 Causes serious eye damage.
H332 Harmful if inhaled.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280 Wear protective gloves/eye protection/face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
The Major Change in SDSs

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Target Organ Effect, Harmful by ingestion, Harmful by skin absorption, Iritant

Target Organs
Central nervous system, Liver, Kidney, Blood, Lungs

GHS Classification
Flammable liquids (Category 2)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Skin irritation (Category 3)
Serious eye damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word
Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H302 + H312 Harmful if swallowed or in contact with skin
H316 Causes mild skin irritation.
H318 Causes serious eye damage.
H332 Harmful if inhaled.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280 Wear protective gloves/eye protection/face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
## The Major Change in SDSs

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

**OSHA Hazards**
- Flammable liquid, Target Organ Effect, Harmful by ingestion, Harmful by skin absorption, Imitant

**Target Organs**
- Central nervous system, Liver, Kidney, Blood, Lungs

**GHS Classification**
- Flammable liquids (Category 2)
- Acute toxicity, Oral (Category 4)
- Acute toxicity, Inhalation (Category 4)
- Acute toxicity, Dermal (Category 4)
- Skin irritation (Category 3)
- Serious eye damage (Category 1)

**GHS Label elements, including precautionary statements**

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Signal word</th>
<th>Danger</th>
</tr>
</thead>
</table>

**Hazard statement(s)**
- H225: Highly flammable liquid and vapour.
- H302 + H313: Harmful if swallowed or in contact with skin
- H316: Causes mild skin irritation.
- H319: Causes serious eye damage.
- H332: Harmful if inhaled.

**Precautionary statement(s)**
- P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P280: Wear protective gloves/eye protection/face protection.
- P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
The Major Change in SDSs

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
- Flammable liquid
- Target Organ Effect
- Harmful by ingestion
- Harmful by skin absorption
- Irritant

Target Organs
- Central nervous system
- Liver, Kidney, Blood, Lungs

GHS Classification
- Flammable liquids (Category 2)
- Acute toxicity, Oral (Category 4)
- Acute toxicity, Inhalation (Category 4)
- Acute toxicity, Dermal (Category 4)
- Skin irritation (Category 3)
- Serious eye damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word

Hazard statement(s)

- H225: Highly flammable liquid and vapour
- H302 + H313: Harmful if swallowed or in contact with skin
- H316: Causes mild skin irritation
- H319: Causes serious eye damage
- H332: Harmful if inhaled

Precautionary statement(s)

- P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P280: Wear protective gloves/eye protection/face protection
- P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Who is responsible for reviewing SDS?

• Anyone using a material should review the SDS first
• Supervisors are responsible for ensuring that employees have access to SDS
• If there is an accident involving an exposure to a hazardous materials, take a copy of the SDS to the health care provider
For additional SDS information

- UC Denver EHS [website](#) on SDS
- [SDS Hyperglossary](#) — A search site by Interactive Learning Paradigms, inc.
- [SDS-SEARCH](#) — A fairly comprehensive compilation of SDS databases. Includes some listed below.
- [Fisher Scientific](#) — SDS information is available from Fisher by clicking on the Safety Information button at the end of the catalogue listing for a particular chemical substance.
- [Sigma Aldrich](#) — Sigma Aldrich Safety Data Sheets are now available on line. You should register ahead of time for quicker access.
- [VWR Scientific](#) - SDS sheets for VWR chemicals.
- [Vermont Safety Information Resources on the Internet (SIRI)](#)