The Globally Harmonized System (GHS) for Hazard Classification and Labeling (Formally Known as Right-To-Know/Hazard Communication)

Development of a Worldwide System for Hazard Communication
What is the GHS?

GHS (formally RTK) is an acronym for the Globally Harmonized System of classification and labeling of chemicals. The GHS is a system for standardizing and harmonizing the classification and labeling of chemicals. It is a logical and comprehensive approach to:

- Defining health, physical and environmental hazards of chemicals;
- Creating classification process that use available data on chemicals for comparison with the defined hazard criteria;
- Communicating hazard information, as well as protective measures, on labels and Safety Data Sheets (SDS).

Purpose Of Harmonization

Where an employee can find information about the hazards of chemicals to which they may be exposed at work so that they can protect themselves from the effects of overexposure.

- Physical hazards
- Health hazards

Two Laws:
- OSHA’s Hazard Communication Standard
- NYS Right-to-Know Law
Changes

- New look to labels
- New Pictograms on labels
- More standardized Safety Data Sheets
  - Better Safety Data Sheet Information

When can chemicals cause a health effect

Chemicals can only cause health effects when they come into contact with your body.

Routes of entry
- Skin contact (absorption through the skin or damage on contact to skin or eyes)
- Inhalation
- Infestation
- Injection
Skin Contact (Routes of Entry)

Chemicals which pass through the skin are nearly always in liquid form. Solid chemicals and gases or vapors do not generally pass through the skin unless they are first dissolved in moisture on the skin's surface.

Some products that can cause irritation or injury are: sulfuric acid, toilet cleaner, dishwashing detergents, household bleach, methyl ethyl ketone, drain cleaner.

Wear appropriate Personal Protective Equipment.

Eye Contact (Routes of Entry)

- Small amounts of chemicals may enter by dissolving in the liquid surrounding the eyes.
- Some products that can enter through eye contact are: acid, alkali, alcohol, bleach, ammonia, toluene.
- Wear appropriate Personal Protective Equipment.
Inhalation (Routes of Entry)

- Contaminated air in the workplace can be inhaled. Air is drawn through the mouth and nose and then into the lungs. An average person will breath in and out about 12 times a minute. Each of the 12 inhalations brings in about 500 mL of air, corresponding to 6 liters of air per minute, together with any contaminants that the air contains.

- Some products that can enter through inhalation are; toluene, methyl ethyl ketone, alcohols, acid mists.

- Wear appropriate Personal Protective Equipment.
Ingestion (Routes of Entry)

- Chemicals can enter the stomach either by swallowing contaminated mucus which has been expelled from the lungs, or by eating and drinking contaminated food. Food and drink are most frequently contaminated by contact with unwashed hands, gloves or clothing, or by being left exposed in the workplace. Nail-biting and smoking also contribute.

- Some products that can enter through ingestion are; asbestos, lead.

- Wear appropriate Personal Protective Equipment and wash your hands.
Injection (Routes of Entry)

In some instances, chemicals may enter by accidental injection through the skin. Once in the bloodstream, the chemicals can be transported to any site or organ of the body where they may exert their effects.

How are hazards communicated

- Labels
- Safety Data Sheets (Material Safety Data Sheets)
Labels: Standardized Form and Language

- HMIS & NFPA Diamond
- Symbol – pictogram
- Standard hazard statement
- Signal Word
  - Danger (more significant)
  - Warning

HMIS & NFPA Diamond

- 0 means almost no hazard
- 4 means extreme danger
**Health Hazard**

- Carcinogen
- Mutagenic
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

- **Carcinogens** cause cancer.
- **Mutagens** cause harm to fetuses.
- **Reproductive toxins** cause problems in pregnancy and/or getting pregnant (men and women).
- **Respiratory Sensitizer** means you may have a heightened reaction on second exposure.
- **Target organ** is the organ that is most effected.
- **Aspiration toxic** means it irritates or harms when you inhale the liquid or solid.
Flammable means vapors burn.

Pyrophorics will ignite spontaneously when exposed to air.

Organic peroxides can sometimes form explosive compounds by themselves.

Self igniters/heaters get warm over time with access to air.
• **Irritants** irritate.

• **Sensitizers** cause more severe second-exposure reactions.

• **Acute** – short term

• **Chronic** – long term
Gas under pressure can release pressure quickly – causing mechanical hazards and releasing large volumes of gas that can displace air (suffocation potential) or be toxic.
Corrosion

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

Exploding Bomb

- Explosives
- Self-Reactives
- Organic Peroxides
**Oxidizers** can cause or contribute to fire in other materials.
Skull and Crossbones

- Acute Toxicity (fatal or toxic)
Signal Words
“Danger” or “Warning”
Used to emphasize hazard and discriminate between levels of hazard.

New Hazards Added - (“NO PICTOGRAM”)

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Signal Word</th>
<th>Hazard Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple Asphyxiate</td>
<td>Warning</td>
<td>May displace oxygen and cause rapid suffocation</td>
</tr>
<tr>
<td>Combustible Dust</td>
<td>Warning</td>
<td>May form combustible dust concentrations in air</td>
</tr>
</tbody>
</table>

Standard Hazard Statement

- GHS label should include appropriate precautionary information.
- The intent is to harmonize precautionary statements in the future.
Sample Label

**Product Identifier**
CODE ______________________________
Product Name _______________________

**Supplier Identification**
Company Name______________________
Street Address _______________________
City __________________ State ______
Postal Code____________ Country ______
Emergency Phone Number _____________

**Precautionary Statements**
Keep container tightly closed. Store in cool, well ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measure against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear Protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.

**Hazard Pictograms**

**Signal Word**
Danger

**Hazard Statement**
Highly flammable liquid and vapor.
May cause liver and kidney damage.

**Supplemental Information**
Directions for use
______________________________
______________________________
Fill weight: ______ Lot Number:_____
Gross weight: ______ Fill Date: ______
Expiration Date: ______

**In Case of Fire:** use dry chemical (BC) or Carbon dioxide (CO2) fire extinguisher to extinguish.

**First Aid**
If exposed call Poison Center.
If on skin (on hair): Take off immediately any contaminated clothing.
Rinse skin with water.

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Role of the Safety Data Sheet (SDS) in the GHS

- The SDS should provide comprehensive information about a chemical substance or mixture.

- Primary Use: The Workplace

- Employers and workers use the SDS as a source of information about hazards and to obtain advice on safety precautions.
SDS Format: 16 headings

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
8. Exposure control/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
Confidential Business Information (CBI)

- The provisions for CBI protection should not compromise the health and safety of users.

- CBI claims should be limited to the names of chemicals and their concentrations in mixtures.

- Mechanisms should be established for disclosure in emergency and non-emergency situations.
How to Obtain a Safety Data Sheet (SDS) @ Upstate Medical University

**Option #1**

1. Go to Upstate Medical University iPage
2. Click on Policies/Forms link
3. Click on Material Safety Data Sheet link on the left side of the page. You will get a “Will open new window” message. Click “OK”
4. Dolphin MSDS page will open
5. In upper right, in “Find” you can type the name of the chemical or product and hit Enter

**Option #2**

Call the Environmental Health Office at 464-5782
How to Obtain a Safety Data Sheet (SDS) at Upstate’s Community Campus

**Option #1**
1. Go to Community Campus intranet
2. Scroll down to Safety
3. Click on SDS

**Option #2**
1. Call 1-888-362-7416 (24 hours a day/7 days a week)
2. Have the following information on hand when calling:
   A) Product name
   B) Manufacturer name
   C) Your fax number
   D) Product code (optional)

**Option #3**
Call Community Campus Environmental Services at 492-5994 or beeper *2960
Who do I call if I have a question?

If you have a question you should first contact your supervisor.

If your question has not been answered or you would like additional information you can contact Upstate Medical University, Environmental Health and Safety (EHS) at 464-5782.