Right to know or Hazard Communication using the Globally Harmonized System (GHS) for Hazard Classification and Labeling

SUNY Upstate Environmental Health and Safety
Revised: 3/2017
Purpose Of Right to Know

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

Physical hazards
Chemical hazards
Biological hazards

Two Laws:

PESH’S  NYS Right–to–Know Law (12 NYCRR Part 820)
What is GHS?

GHS is an acronym for the Globally Harmonized System of classification for the labeling of chemicals.

GHS was implemented to standardize and harmonize chemical labeling by using a 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).
NEW CHANGES

⇒ New look to labels

⇒ New pictograms on labels.

⇒ More standardized Safety Data Sheets.
  ◦ Better Safety Data Sheet information.
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
- Ingestion
- Injection
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, and 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.
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; methanol, formaldehyde, alcohols, and 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 hazardous chemicals that can enter through ingestion are asbestos and lead.

Wear appropriate Personal Protective Equipment and wash your hands.
In some instances, chemicals may enter by accidental injection through the skin. Once in the blood stream, 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 (Formerly Material Safety Data Sheets)
Labels: Standardized Form and Language

HMIS & NFPA Diamonds (older labeling systems that are still widely used).

Symbol – pictogram

Standard hazard statement

Signal Word
  ◦ Danger (more significant)
  ◦ Warning
HMIS & NFPA Diamond

- 0 means almost no hazard
- 4 means extreme danger
• 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.
Environment
(Non-Mandatory)

• Aquatic Toxicity
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>Flammable Liquid</td>
<td>Danger</td>
<td>Flammable Liquid and Vapor. Harmful if inhaled.</td>
</tr>
</tbody>
</table>
GHS label should include appropriate precautionary information.

The intent is to harmonize and update precautionary statements.
**Sample Label**

<table>
<thead>
<tr>
<th><strong>Product Identifier</strong></th>
<th><strong>Hazard Pictograms</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE ___________________</td>
<td><img src="image" alt="Pictograms" /></td>
</tr>
<tr>
<td>Product Name ___________</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Supplier Identification</strong></th>
<th><strong>Signal Word</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Name ______________</td>
<td>Danger</td>
</tr>
<tr>
<td>Street Address _____________</td>
<td></td>
</tr>
<tr>
<td>City _______________ State ___</td>
<td></td>
</tr>
<tr>
<td>Postal Code ___________ Country ______</td>
<td></td>
</tr>
<tr>
<td>Emergency Phone Number ______________</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Precautionary Statements</strong></th>
<th><strong>Hazard Statement</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep container tightly closed. Store in cool, well ventilated place that is locked.</td>
<td>Highly flammable liquid and vapor. May cause liver and kidney damage.</td>
</tr>
<tr>
<td>Keep away from heat/sparks/open flame. No smoking.</td>
<td></td>
</tr>
<tr>
<td>Only use non-sparking tools.</td>
<td></td>
</tr>
<tr>
<td>Use explosion-proof electrical equipment.</td>
<td></td>
</tr>
<tr>
<td>Take precautionary measure against static discharge.</td>
<td></td>
</tr>
<tr>
<td>Ground and bond container and receiving equipment.</td>
<td></td>
</tr>
<tr>
<td>Do not breathe vapors.</td>
<td></td>
</tr>
<tr>
<td>Wear Protective gloves.</td>
<td></td>
</tr>
<tr>
<td>Do not eat, drink or smoke when using this product.</td>
<td></td>
</tr>
<tr>
<td>Wash hands thoroughly after handling.</td>
<td></td>
</tr>
<tr>
<td>Dispose of in accordance with local, regional, national, international regulations as specified.</td>
<td></td>
</tr>
</tbody>
</table>

**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.

Fill weight: ______ Lot Number:______
Gross weight: ______ Fill Date: ______
Expiration Date: ______
The SDS should provide comprehensive information about a product, chemical substance, or mixture.

Primary Use: The Workplace
Employers and workers use the SDS as a source of more information about hazards and to obtain guidance on safety precautions.
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
How to Obtain a Safety Date Sheet (SDS) @ Upstate Medical University

Option #1 intranet
1. Go to Upstate Medical University iPage
2. Click on Policies/Forms link
3. Click on Safety Data Sheet link on the left side of the page. You will get a “Will open new window” message. Click “OK”
4. Dolphin SDS 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
Who to contact with questions

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.