University of Hawaii
GHS Updates for Non-Lab Personnel

Mandatory Training on the Changes to the OSHA Hazard Communication Standard - Globally Harmonized System (GHS)
Special Training Note

• This module is to be used by UH Manoa-based personnel who work with hazardous chemicals in a non-lab setting (shop, warehouse, maintenance areas, for example) and who have already completed Hazard Communication training. It includes topics OSHA requires employees to be trained on by December, 2013.

• It is up to departments & supervisors to ensure that this training is completed and documented.

• Upon completing a review of this module, complete the quiz (link provided on the last slide)

• You will receive an email verification that your training has been completed.

• Contact Hans O. Nielsen, EHSO Education Coordinator at hansn@hawaii.edu or by phone at 956-5180 with any questions.
What is Hazard Communication?

- Hazard Communication or “HazCom” or “HCS” is an OSHA required training program that covers hazardous chemicals used in your workplace. This training is required prior to work with chemicals.
- If you have not yet completed general HazCom Training, contact UH EHSO Education Coordinator Hans O. Nielsen at hansn@hawaii.edu to schedule a session.
The UH HazCom program has is required to be implemented by departments whose employees handle hazardous chemicals.

Elements of the HazCom program include:

- **Training** (initial and when new hazards are introduced)
- **Inventory of hazardous chemicals** (updated annually)
- Safety Data Sheets
- **Warning labels** on all containers of hazardous materials

The UH HazCom Program has been updated to include OSHA required changes (GHS, Labeling, SDS): [http://www.hawaii.edu/ehso/industrial/HAZCOM.pdf](http://www.hawaii.edu/ehso/industrial/HAZCOM.pdf)
Globally Harmonized System (GHS)

- The OSHA HazCom changes are being made to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The GHS system provides a globally consistent manner of chemical hazard classification, labeling and communicating the hazards of chemicals via safety data sheets (SDS). It is a logical and comprehensive approach to:
  - Defining health, physical and environmental hazards of chemicals;
  - Creating classification processes that use available data on chemicals for comparison with the defined hazard criteria; and
  - **Communicating hazard information, as well as protective measures, on labels and Safety Data Sheets (SDS).**

- Chemical manufacturers in the US have until June 1, 2015 to convert to the new GHS labeling and SDS systems, though some manufacturers may already be using GHS labeling, pictograms, and the new SDS format.
Main Changes Affecting Laboratory Users of Hazardous Chemicals

GHS/HazCom

- 3 Chemical Classifications
- Communication Methods

- Physical
- Health
- Environmental
- Labels
- Safety Data Sheets
Chemical Hazard Classifications

3 Chemical Hazard Classifications:

- The manner in which manufacturers evaluate chemicals is changing.
- Chemicals must be reclassified as **Health Hazards, Physical Hazards, and Environmental Hazards**.

### Physical Hazards:
1. Explosives
2. Flammable Gasses
3. Flammable Aerosols
4. Oxidizing Gases
5. Gases Under Pressure
6. Flammable Liquids
7. Flammable Solids
8. Self-Reactive Substances
9. Pyrophoric Liquids
10. Pyrophoric Solids
11. Self-Heating Substances
12. Substances Which in Contact With Water Emit flammable Gases
13. Oxidizing Liquids
14. Oxidizing Solids
15. Organic Peroxides
16. Substances Corrosive to Metal

### Health Hazards:
1. Acute Toxicity
2. Skin Corrosion
3. Skin Irritation
4. Eye Effects
5. Sensitization
6. Germ Cell Mutagenicity
7. Carcinogenicity
8. Reproductive Toxicity
9. Target Organ Systemic Toxicity
10. Aspiration Hazard

### Environmental Hazards:
1. Acute Aquatic Toxicity
2. Chronic Aquatic Toxicity
Chemical Hazard Classifications
Categories/Ranking

Chemical Hazard Classifications Categories:

- Current NFPA 704 Diamond and HMIS hazard classification systems, which most of you may be familiar with, use a system of five numbers, ranging from 0 to 4, to indicate the severity of hazard, with 0 being the least and 4 being the most hazardous.

- However, the new GHS uses a different classification system for hazards, with 1 being the most serious level of hazard—the opposite of the hazard rating scale used in the NFPA diamond and a source of potential confusion for users.

- You may still see NFPA diamonds on labels, but this is expected to change!
Labels

- Three key label components will be standardized.
  - Symbols or Pictograms
  - Signal Words
  - Hazard Statements

- Use the following OSHA GHS pictogram link to assist with recognizing hazards on containers shipped in the next few years:
Label Requirements (GHS) – Shipped Containers

- Part of the new HazCom Standard requires that labels have:
  - Product Identifier
  - Signal word
  - Hazard statement(s)
  - Pictogram(s)
  - Precautionary statement(s)
  - Name, address, and phone number of the responsible party

- **Do your best to leave these labels on!**
# GHS Pictograms and Hazards

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Flame</th>
<th>Exclamation Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carcinogen</td>
<td>Flammables</td>
<td>Irritant (skin and eye)</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Pyrophorics</td>
<td>Skin Sensitizer</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Self-Heating</td>
<td>Acute Toxicity</td>
</tr>
<tr>
<td>Respiratory Sensitizer</td>
<td>Emits Flammable Gas</td>
<td>Narcotic Effects</td>
</tr>
<tr>
<td>Target Organ Toxicity</td>
<td>Self-Reactives</td>
<td>Respiratory Tract Irritant</td>
</tr>
<tr>
<td>Aspiration Toxicity</td>
<td>Organic Peroxides</td>
<td>Hazardous to Ozone Layer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Non-Mandatory)</td>
</tr>
<tr>
<td>Gas Cylinder</td>
<td></td>
<td>Exploding Bomb</td>
</tr>
<tr>
<td>Gases Under Pressure</td>
<td>Skin Corrosion/Burns</td>
<td>Explosives</td>
</tr>
<tr>
<td></td>
<td>Eye Damage</td>
<td>Self-Reactives</td>
</tr>
<tr>
<td></td>
<td>Corrosive to Metals</td>
<td>Organic Peroxides</td>
</tr>
<tr>
<td>Flame Over Circle</td>
<td>Environment (Non-Mandatory)</td>
<td>Skull and Crossbones</td>
</tr>
<tr>
<td>Oxidizers</td>
<td>Aquatic Toxicity</td>
<td>Acute Toxicity (fatal or toxic)</td>
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</table>
Signal Words!!

- Labels are required to use a signal word indicating relative hazard severity.
- Must be either **DANGER** or **WARNING**
  - “Danger” for more severe hazards
  - “Warning” for less severe hazards
Safety Data Sheets

Safety Data Sheet (SDS):

- Soon, these will be no longer called Material Safety Data Sheets or MSDS.
- New SDS is now standardized in 16 sections.
- All manufacturers are required to use the same standardized 16-section format by June 1, 2015.
Safety Data Sheets – 16 Standardized Sections

1. Identification
2. Hazards
3. Info on ingredients
4. First aid measures
5. Fire fighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological considerations*
13. Disposal considerations*
14. Transport info.*
15. Regulatory info.*
16. Other information, including date of preparation or last revision*

* Sections 12-15 may be included in the SDS but are not required by OSHA
Several chemical manufacturers are already using the new SDS 16 section format. See the Sigma-Aldrich SDS for Acetone to review the sections and become familiar with the new layout.
For More Information

- Refer to the Environmental Health & Safety Office Website: www.hawaii.edu/ehso/
- Contact Hans O. Nielsen, EHSO Education Coordinator at hansn@hawaii.edu or by phone at 956-5180 with any questions or to schedule general HazCom training.

Continue to next slide for link to quiz.....
Training Module Complete

To receive credit for completing this training:

1) Go to the following [GHS/SDS quiz for Non-Lab Personnel](#) link to provide employee information and take the quiz.

2) Upon passing the quiz (70% or above) you will receive an email verification that your training is completed. Please allow approximately one week for this email.

3) Don’t forget to do this by December, 2013! If you cannot make this deadline, do so as soon as possible!