Global Harmonization Standard (GHS)
29 CFR 1910.1200

GHS is designed to replace the various classification and labeling standards used in different countries by using consistent criteria for classification and labeling on a global level. This update to the Hazard Communication Standard (HCS) will provide a common and coherent approach to classifying chemicals and communicating hazard information on labels and safety data sheets.

Training on the new labels elements and safety data sheets (SDS) format is required by **December 1, 2013**. Manufacturers and distributors must reclassify their chemicals and produce GHS formatted SDS and labels by June 1, 2015. Employers must be fully compliant with GHS by **June 1, 2016**. They must complete updates to their hazard programs and labeling procedures and have employees trained on the new hazard and safety procedure identified during the chemical reclassifications done by manufacturers and distributors.

The new requirements for manufacturer's labels include six components:

1. Product name or identifier
2. Pictograms
3. Signal word (Danger or Warning)
4. Hazard Statements
5. Precautionary statements
6. Name, address and telephone number of the chemical manufacturer, importer or other responsible party.

1. Product Identifier	**Sulfuric Acid**
2. Pictogram(s)	
3. Signal Words	**Danger**
4. Hazard Statement	Causes severe skin burns and eye damage. Fatal if inhaled, harmful to aquatic life
5. Precautionary Statement	Do Not breathe dust/fume/gas/vapors/sprays Wear protective gloves, cloths, eye, and face protection
6. Supplier Information	Sigma Aldrich, Any town USA, 46414, Phone: 218-777-6666, Fax: 1-800-889-9999

All secondary containers must be labeled with:

1. Product identifier
2. Signal word (Danger or Warning)
3. Hazard statement
4. Pictograms

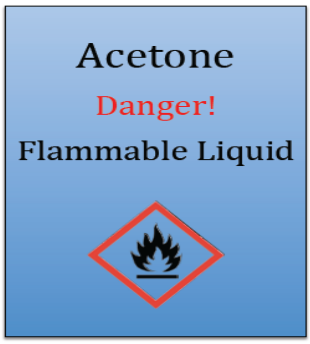
Secondary Container Label for an Acetone Container used in a Lab or a Shop

1. **Identifier** --->

2. **Signal Word** --->

3. **Hazard Statement** --->

4. **Pictogram** --->



Things get tricky between GHS and NFPA/HMIS systems in the use of numbers. With GHS, the lower the categorization numbers the greater the severity of the hazard. NFPA and HMIS is opposite, with the higher number the greater the severity of the hazard. However, the GHS numbers do not show up on the label but only appear on the Safety Data Sheets. This should be less confusing in the SDS since there is more contextual information available to help the reader understand the hazard information. The NFPA and HMIS numbers will appear on the label as they have in the past.

GHS vs NFPA/HMIS

GHS – Numbers not on label but in SDS
- ▸1 = Severe Hazard
- ▸4 = Minor Hazard

NFPA/HMIS – Numbers on label
- ▸1 = Minor Hazard
- ▸4 = Severe Hazard

Pictograms (hazard symbols):

Convey health, physical and environmental hazard information. The composition may include a symbol plus a border, background pattern, or color that is intended to convey specific information about the hazards of a chemical. Nine pictograms are designated under the GHS red border, black symbol, white background for health and physical hazards.

Two sets of pictograms are included within the GHS: one for the labeling of containers and for workplace hazard warnings, and a second for use during the transport of dangerous goods. Either one or the other is chosen, depending on the target audience, but the two are not used together. The two sets of pictograms use the same symbols for the same hazards, although certain symbols are not required for transport pictograms. Transport pictograms come in wider variety of colors and may contain additional information such as a subcategory number.

Transport "Pictograms"		
		
Flammable Liquid Flammable Gas Flammable Aerosol	Flammable solid Self-Reactive Substances	Pyrophorics (Spontaneously Combustible) Self-Heating Substances
		
Substances, which in contact with water, emit flammable gases (Dangerous When Wet)	Oxidizing Gases Oxidizing Liquids Oxidizing Solids	Explosive Divisions 1.1, 1.2, 1.3

		
Explosive Division 1.4	Explosive Division 1.5	Explosive Division 1.6
		
Compressed Gases	Acute Toxicity (Poison): Oral, Dermal, Inhalation	Corrosive
		
Marine Pollutant	Organic Peroxides	

Non-GHS transport pictograms

The following pictograms are included in the UN Model Regulations but have not been incorporated into the GHS because of the nature of the hazards.

Class 6.2

Infectious substances

Class 7

Radioactive material

Class 9

Miscellaneous dangerous substances and articles

Safety Data Sheets (SDS)

GHS has dropped the word “Material” from Material Safety Data Sheets (MSDS). It will now be called Safety Data Sheets (SDS). MSDS may contain from 8 to 16 sections depending on the format in which it was written. SDS will now contain 16 sections for each chemical. OSHA will not enforce sections 12-15 that require information outside OSHA’s jurisdiction. The primary difference between GHS requirements in terms of headings and sections and the international industry recommendations is that sections 2

and 3 have been reversed in order. The 16 section headings for GHS are now:

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

Reference:
GHS Guide on OSHA website:

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

This fact sheet is not all inclusive, but provides background information on the GHS transition. For further questions, please contact UMCES Environmental Safety Officer at X8441 or e-mail hpl-safety@hpl.umces.edu.