

Applies to: (examples; Faculty, Staff, Students, etc)

Faculty , Staff , Students , Contractors_Vendors

Policy Overview:

Issued: 07-01-2015

Next Review Date: 06-24-2023

Frequency of Review: Annually

The Globally Harmonized System (GHS) is a world-wide system adopted by OSHA for standardizing and harmonizing the classification and labeling of chemicals.

Policy applies to UHSP Faculty, Staff, and Students and any personnel who might potentially be exposed to hazardous materials.

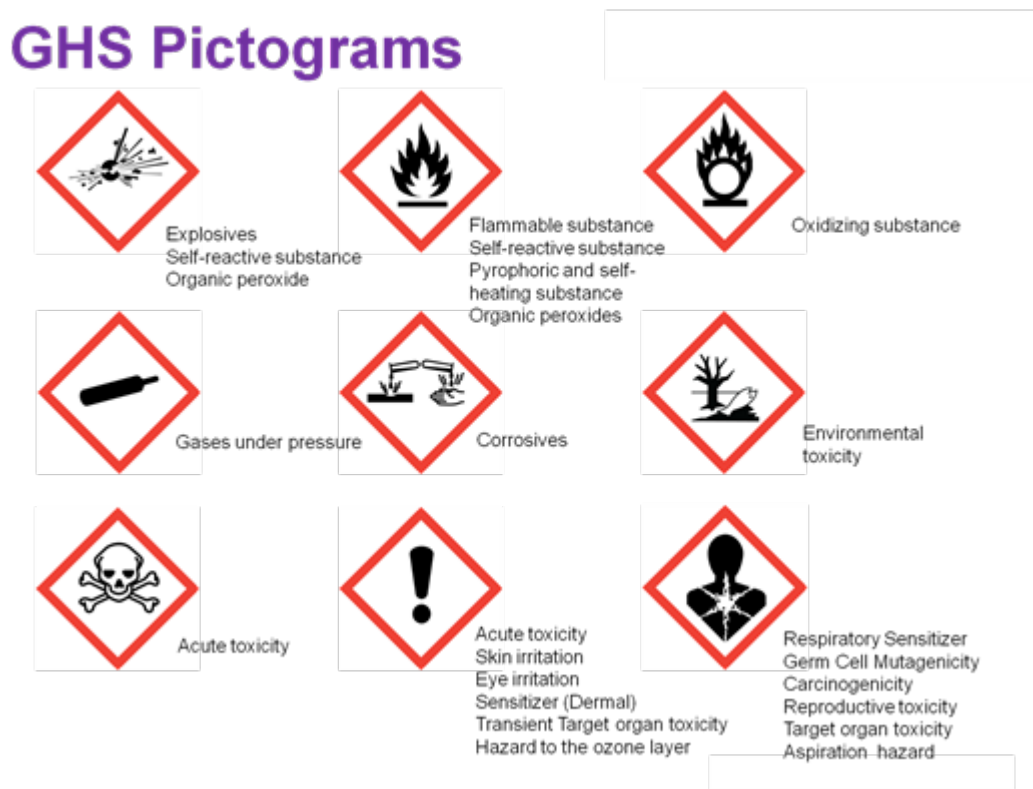
Definitions:

Term	Definition
GHS	GHS stands for stands for the Globally Harmonized System of Classification and Labelling of Chemicals. GHS defines and classifies the hazards of chemical products, and communicates health and safety information on labels and safety data sheets).
SDS	Safety Data Sheet. SDS is the term used by GHS for Material safety data sheet (MSDS).
Class	Class is the term used to describe different types of hazards.
Category	Category is the name used to describe the sub-sections of classes.
Hazard Statement	For each category of a class, a standardized statement is used to describe the hazard.
Precautionary statement	These statements are standardized phrases that describe the recommended steps to be taken to minimize or prevent adverse effects from exposure to or resulting from improper handling or storage of a hazardous product.
Signal Word	There are two signal words used by the GHS – Danger and Warning. These signal words are used to communicate the level of hazard on both the label and the SDS.
Pictogram	Refers to the GHS symbol on the label and SDS. Not all categories have a symbol associated with them.

Details:

1. a. i. Objectives
 - i. The objectives of the GHS are to:
 - i. Define health, physical, and environmental hazards of chemicals;
 - ii. Create classification processes that use available data on chemicals for comparison with the defined hazard criteria (numerical hazard classification is based on a 1 – 5 scale, 1 being the most hazardous and 5 being the least hazardous); and
 - iii. Communicate hazard information, as well as protective measures, on labels and Safety Data Sheet (SDS), formerly known as Material Safety Data Sheets (MSDS).

iv. Figure I.a.iv. depicts GHS



pictograms

ii. Safety Data Sheets

- i. The SDS provides comprehensive information that is imperative for the safe handling of hazardous chemicals. Laboratory personnel should use the SDS as a resource to obtain information about hazards and safety precautions. SDSs cannot provide information for hazards in all circumstances. However, the SDS information enables the employer to develop an active program of worker protection measures such as training on hazard mitigation. Chemical manufacturers are required to use a standard format when developing SDSs. The SDS will contain 16 headings.

iii. Scope

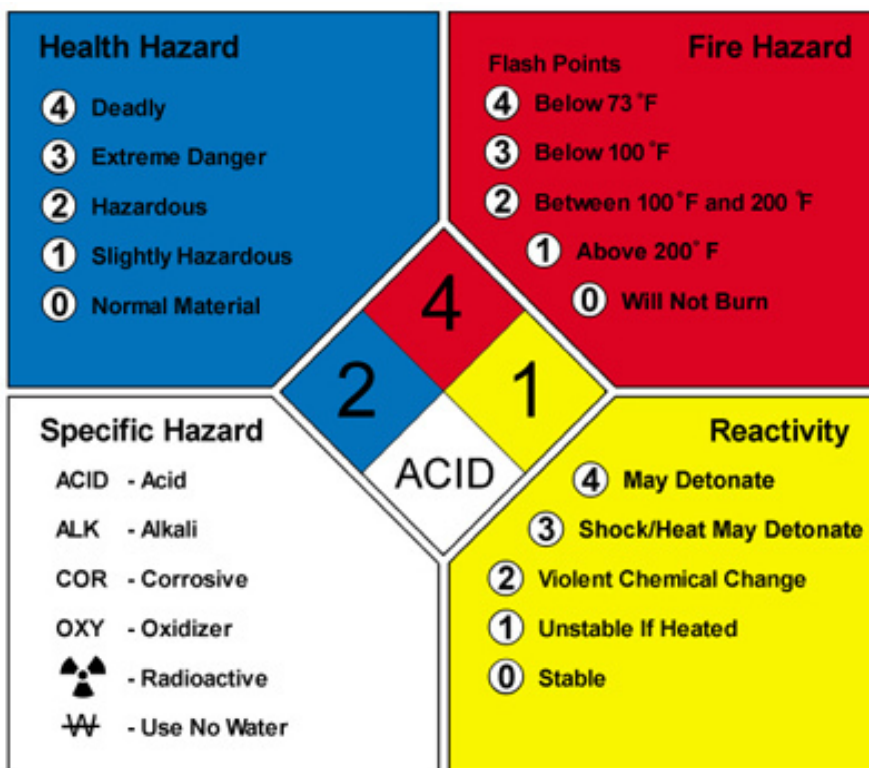
- i. GHS covers all hazardous chemicals and may be adopted to cover chemicals in the workplace, transport, consumer products, pesticides and pharmaceuticals. The target audiences for GHS include workers, transport workers, emergency responders and consumers.

iv. Chemical Labeling

- i. The GHS standardized label elements, which are not subject to variation and must appear on the chemical label, contain the following elements:
 - i. Symbols (hazard pictograms) are used to convey health, physical and environmental hazard information, assigned to a GHS hazard class and category;
 - ii. Signal Words such as "Danger" (for more severe hazards) or "Warning" (for less severe hazards), are used to emphasize hazards and indicate the relative level of severity of the hazard assigned to a GHS hazard class and category;
 - iii. Hazard statements (e.g., "Danger! Extremely Flammable Liquid and Vapor") are standard phrases assigned to a hazard class and category that describe the nature of the hazard; and
 - iv. Precautionary statements are recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical.
- ii. GHS also standardizes the hazard pictograms that are to be used on all hazard labels and SDSs. There are 9 pictograms that represent several defined hazards, and include the harmonized hazard symbols which are intended to convey specific information about each hazard.
- iii. GHS labeling requirements are only applicable to chemical manufacturers, distributors, and shippers of chemicals. GHS labeling requirements are not required for chemicals being stored in a laboratory. However, since most chemicals stored in the laboratory have been purchased from a chemical manufacturer, the GHS labeling and pictogram requirements are very relevant and must be understood by laboratory employees. Figure 2.4.3 illustrates the GHS label format showing the required elements.
- iv. One of the objectives of GHS was to create a quantitative hazard classification system (numerical hazard classification is based on a 1 – 5 scale, 1 being the most hazardous and 5 being the least hazardous) based on physical characteristics such as flash point, boiling point, lethal dose of 50% of a population, reactivity, etc. Table 2.1 illustrates how the numerical hazard classification works for flammable liquids. More detailed information on GHS can be found on the OSHA website. (<https://www.osha.gov/dsg/hazcom/ghs.html>)

v. National Fire Protection Association Rating System

- i. The NFPA system uses a diamond-shaped diagram of symbols and numbers to indicate the degree of hazard associated with a particular chemical. This system was created to easily and quickly communicate hazards to first responders in the event of an emergency situation. These diamond-shaped symbols are placed on chemical containers to identify the degree of hazard associated with the specific chemical or chemical mixture. The NFPA system is a common way to identify chemical hazards and should be understood by laboratory employees. The NFPA 704 numerical rating system is based on a 0 – 4 system; 0 meaning no hazard and 4 meaning the most hazardous (note: this in contrast to the GHS system where 1 is the most hazardous and 4 is the least hazardous). Figure V.a. illustrates the NFPA hazard rating system and identifies both the hazard categories and hazard rating



system.

vi. Department of Transportation Hazard Classes

- i. The DOT regulates the transportation of all hazardous materials in the United States, and defines a hazardous material as any substance that has been determined to be capable of posing an unreasonable risk to health, safety, or property when transported in commerce. There are several methods that can be employed to determine whether a chemical is hazardous for transport, a few of which included:
- i. Reviewing the DOT Hazardous Materials Table (49 CFR 172.101);
 - ii. Reviewing the SDS, specifically Section 2: Hazardous Identification and Section 14: Transport Considerations, for the chemical being shipped, as detailed in Section 2.3 of the CHP;
 - iii. Reviewing the chemical label and looking for hazard information detailed above;
 - iv. Understanding the chemical and physical properties of the chemical.
- ii. A sample SDS sheet can be found in the Resources section of this policy.
- iii. All hazardous chemicals must be properly labeled by the chemical manufacturer or distributor before transportation occurs. Chemical containers stored in laboratories are not required to be labeled per DOT standards; however the DOT 9 hazard classes are

often seen on chemical containers and are discussed in Section 14 of GHS-formatted

Class 1 EXPLOSIVES



LPHM100



LPHM101



LPHM102



LPHM103



LPHM104



LPHM105

Class 2 GASES (NON-FLAMMABLE & FLAMMABLE, TOXIC / POISON)

Class 3 FLAMM. LIQUID



LPHM200



LPHM201



LPHM202



LPHM203



LPHM204



LPHM300

Class 4 FLAMMABLE SOLIDS

Class 5 OXIDIZER / ORGANIC PEROXIDE



LPHM400



LPHM401



LPHM402



LPHM500



LPHM501

Class 6 TOXIC / POISONOUS & INFECTIOUS SUBSTANCES



LPHM600



LPHM601



LPHM602



LPHM603



LPHM604

Class 7 RADIOACTIVE

Class 8 CORROSIVE

Class 9 MISCELLANEOUS DANGEROUS GOODS



SDSs.

LPHM700



LPHM701



LPHM702



LPHM800



LPHM900

1. Class 1 – Explosives
2. Class 2 – Gases
3. Class 3 – Flammable Liquids
4. Class 4 – Flammable Solids; Spontaneously Combustible Materials; Dangerous when Wet Materials
5. Class 5 – Oxidizers and Organic Peroxides
6. Class 6 – Toxic Materials and Infectious Substances
7. Class 7 – Radioactive Materials
8. Class 8 – Corrosive Materials
9. Class 9 – Miscellaneous Dangerous Goods

Procedures:

1. Training Requirements
 - a. The following groups are required to complete the Moodle online Globally Harmonized System lesson and quiz on an annual basis:

- i. Facilities personnel;
 - ii. Housekeeping personnel;
 - iii. Public Safety personnel;
 - iv. Laboratory managers, faculty, and teaching assistants;
 - v. Students enrolled in lab at the University;
 - vi. Individuals needing access to 6th floor ARB research area;
- b. The quiz must be completed following review of the lesson.
 - c. A minimum score of 90% is required to achieve a passing score.

Responsibilities:

Position/Office/Department	Responsibility
Environmental Health & Safety	Updating Moodle training, maintaining course records, verifying completion of training from different groups.

Resources:

- [UHSP Chemical Hygiene Plan](#)
- [Sample SDS Sheet](#)
- [Hazard Communication Program](#)

Policy Contacts:

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