

Introduction to GHS – Pictograms



Acutely toxic



Oxidizer



Gas under pressure



**Burns skin
Damages eyes
Corrosive to metals**



**Explosive
Self-reactive
Organic peroxide**



**Acutely toxic (harmful), Irritant
to skin, eyes or respiratory tract,
Skin sensitizer**



**Flammable, Self-reactive,
Pyrophoric, Self-heating, Emits
flammable gas, Organic peroxide**



**Carcinogen, Mutagen, Reproductive
toxin, Respiratory sensitizer, Toxic
to target organs, Toxic if aspirated**



Toxic to aquatic life (optional)

Introduction to GHS Pictograms

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is an internationally agreed-upon system, created by the United Nations, to standardize and harmonize the classification and labeling of chemicals. It aims to ensure that information on physical hazards and toxicity of chemicals is available to enhance the protection of human health and the environment. Below are detailed descriptions of the GHS pictograms used to convey chemical hazards.

1. Health Hazard

Description: This symbol indicates that the substance can cause serious health effects, including respiratory sensitization, mutagenicity, carcinogenicity, reproductive toxicity, specific target organ toxicity (single or repeated exposure), and aspiration toxicity.

Example Hazards: Carcinogens, respiratory sensitizers, reproductive toxins.

Safety Measures: Use appropriate personal protective equipment (PPE), ensure proper ventilation, avoid inhalation, and follow handling instructions.

2. Flame

Description: Indicates that the substance is flammable. This includes flammable gases, aerosols, liquids, and solids, as well as substances that are self-heating, emit flammable gas when in contact with water, or are organic peroxides.

Example Hazards: Acetone, ethanol, propane.

Safety Measures: Store away from heat sources, sparks, open flames, and hot surfaces. Use non-sparking tools and explosion-proof equipment.

3. Exclamation Mark

Description: This symbol is used for less severe health hazards, including skin and eye irritation, skin sensitization, acute toxicity (harmful), specific target organ toxicity (single exposure), respiratory tract irritation, and narcotic effects.

Example Hazards: Ammonia, hydrochloric acid.

Safety Measures: Avoid contact with skin and eyes, use appropriate PPE, and ensure proper ventilation.

4. Gas Cylinder

Description: Indicates that the substance is a gas under pressure. This includes compressed gases, liquefied gases, refrigerated liquefied gases, and dissolved gases.

Example Hazards: Carbon dioxide, helium.

Safety Measures: Store cylinders securely, handle with care to prevent leaks, and keep away from heat sources.

5. Corrosion

Description: Indicates that the substance can cause skin corrosion/burns and eye damage, and is corrosive to metals.

Example Hazards: Sulfuric acid, sodium hydroxide.

Safety Measures: Use suitable protective clothing and eye protection, handle with care, and store in appropriate containers to prevent metal corrosion.

6. Exploding Bomb

Description: This symbol denotes substances that are explosive or self-reactive, which can cause explosions when exposed to heat, shock, friction, or other reactions.

Example Hazards: TNT, nitroglycerin.

Safety Measures: Store in a cool, dry place away from sources of ignition, handle with extreme care, and follow regulatory guidelines for explosive materials.

7. Flame Over Circle

Description: Indicates oxidizers, which can cause or intensify a fire or explosion by yielding oxygen.

Example Hazards: Hydrogen peroxide, potassium nitrate.

Safety Measures: Keep away from flammable and combustible materials, store in a cool, well-ventilated area, and handle with care to avoid contamination.

8. Skull and Crossbones

Description: This symbol represents acute toxicity, where exposure to even small amounts can be fatal or toxic.

Example Hazards: Cyanide, methanol.

Safety Measures: Use extreme caution, wear appropriate PPE, ensure good ventilation, and avoid ingestion, inhalation, and skin contact.

9. Environment (Non-Mandatory)

Description: Indicates that the substance is hazardous to the aquatic environment, with short-term or long-term exposure causing adverse effects.

Example Hazards: Mercury, lead compounds.

Safety Measures: Prevent release into the environment, dispose of properly, and follow environmental protection regulations.

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