

# Glossary of Hazard Communication Terms

**acute toxicity.** Adverse effects occurring following oral or dermal administration of a single dose of a substance, or multiple doses given within 24 hours, or an inhalation exposure of four hours.

**aerosol.** Any non-refillable receptacle containing a gas compressed, liquefied, or dissolved under pressure and fitted with a release device allowing the contents to be ejected as particles in suspension in a gas, or as a foam, paste, powder, liquid, or gas.

**alternative label.** Product identifier and words, pictures, symbols, or combination thereof that provide at least general information regarding the hazards of the chemicals, and that, in conjunction with other information immediately available to employees under the hazard communication program, will provide employees with specific information regarding the physical and health hazards of the hazardous chemical.

**American Conference of Governmental Industrial Hygienists (ACGIH).**

**appearance and odor.** May help you identify a substance.

**aspiration hazard.** The danger of severe acute effects such as chemical pneumonia, varying degrees of pulmonary injury, or death following the entry of a liquid or solid chemical directly through the oral or nasal cavity, or indirectly from vomiting, into the trachea and lower respiratory system.

**boiling point.** The temperature at which the liquid becomes a gas. Ranges are given for mixtures.

**carcinogenicity.** The classification of a substance or mixture as posing a hazard which induces cancer or increases its incidence.

**chronic.** A long period of action measured in weeks, months, or years.

**chronic effect.** Effects that generally occur as a result of long-term exposure and are of long duration. Damage may accumulate after multiple exposures or over a long exposure period or arise long after earlier exposures.

**combustible dust.** Any finely divided solid material which presents a fire or explosion hazard when dispersed in air.

**corrosion.** A chemical action that causes visible destruction or irreversible alteration in human skin tissue at the site of contact or in the case of leakage from its packaging, a liquid that has a severe corrosion rate on steel.

**Department of Transportation (DOT).** Department of the U.S. federal government that coordinates and institutes national transportation programs.

**DOT.** See Department of Transportation.

**explosive (Cal/OSHA HCS).** A substance that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

**explosive (Fed/OSHA HCS).** A solid or liquid chemical which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings.

**Exposure Limit or Occupational Exposure Limit (OEL).** The concentration of a chemical in the workplace air to which most people can be exposed without experiencing harmful effects. Exposure limits should not be taken as sharp dividing lines between safe and unsafe exposures. It is possible

for a chemical to cause health effects, in some people, at concentrations lower than the exposure limit. flammable (Cal/OSHA HCS). A substance that falls into one of the following categories:

**aerosol, flammable.**

- 1) An aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening; gas, flammable:
- 2) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen (13) percent of volume or less; or
- 3) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve (12) percent by volume, regardless of the lower limit.

**liquid, flammable.** Any liquid having a flash point below 100°F (37.8°C), except any mixture having components with flash points of 100°F (37.8°C) or higher, the total of which make up 99% or more of the total volume of the mixture.

**solid, flammable.** A solid, other than a blasting agent or explosive as defined in section 5237(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

**flammable** (Fed/OSHA HCS). A substance that falls into one of the following categories:

**aerosol, flammable.** Aerosols shall be considered for classification as flammable if they contain any component which is classified as flammable in accordance with the definition of Flammable Liquids, Flammable Gases, or Flammable Solids.

**gas, flammable.** A gas having a flammable range with air at 68°F (20°C) and a standard pressure of 101.3 kPa (14.7 psi). liquid, flammable. A liquid having a flash point of not more than 199.4°F (93°C).

**solid, flammable.** A solid which is a readily combustible solid, or which may cause or contribute to fire through friction.

**flash point.** The lowest temperature at which a liquid gives off enough vapor to make an ignitable mixture in air.

**germ cell mutagenicity.** The classification of a chemical as posing a hazard of permanent change in the amount or structure of the genetic material in a cell.

**GHS.** See Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Globally Harmonized System of Classification and Labeling of Chemicals (GHS).** An international 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 and protective measures on labels and Safety Data Sheets.

**Hazard Communication Standard (HCS).** The OSHA regulation which requires manufacturers or importers to assess the hazards of substances that they produce or import, and all employers to provide information to their employees about the hazardous substances to which employees may be exposed by means of a hazard communication program, labels and other forms of warning, Material

Safety Data Sheets, and information and training. In addition, this law requires distributors to transmit the required information to employers.

**hazard not otherwise classified (HNOC).** The classification of a substance or mixture as posing a hazard of an adverse physical or health effect identified through evaluation of scientific evidence during the classification process that does not meet the specified criteria for the physical and health hazard classes addressed in the HCS. This does not extend coverage to adverse physical and health effects for which there is a hazard class addressed in the HCS, but the effect either falls below the cut-off value/concentration limit of the hazard class or is under a GHS hazard category that has not been adopted by OSHA.

**hazard statement.** A statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.

**HCS.** See Hazard Communication Standard.

**HMIS III.** Third version of Hazardous Material Identification System launched in 2001 that uses a numbering and color system to rate hazards in the workplace. Includes recommended protective equipment rating system.

**Immediately Dangerous to Life or Health (IDLH).** Exposure to airborne contaminants that is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment.

**Lower Explosive Limit (LEL)/Upper Explosive Limit (UEL).** The lower and upper limits of vapor and air concentration, given as a percentage, which can cause an explosion or be considered flammable.

**Material Safety Data Sheet (MSDS).** Written or printed material concerning a hazardous chemical that is prepared in accordance with paragraph (g) of the Hazard Communication Standard (29 CFR §1910.1200). After June 1, 2016, only Safety Data Sheets using the new HCS format will be allowed.

**Milligrams of a material per cubic meter of air (mg/m<sup>3</sup>).** A unit of metric measurement for concentration (weight/volume). The concentrations of any airborne chemical can be measured in mg/m<sup>3</sup>, whether it is a solid, liquid, gas, or vapor.

**MSDS.** See Material Safety Data Sheet.

**NFPA 704.** Addresses the health, flammability, instability, and related hazards that are presented by short term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Uses numbers, colors, and symbols in a system to represent hazard categories and severity.

**narcotic effect.** (Target organ toxicity-single exposure category.) Produces a transient (temporary) state similar to narcosis; stupor, unconsciousness, or arrested activity; can be produced by the influence of chemical and physical agents.

**organic peroxide.** Liquid or solid organic chemical which contains the bivalent -O-O- structure and as such is considered a derivative of hydrogen peroxide, where one or both of the hydrogen atoms have been replaced by organic radicals. Organic peroxides are thermally unstable chemicals, which may undergo exothermic self-accelerating decomposition. In addition, they may be liable to explosive decomposition, burn rapidly, be sensitive to impact or friction, and/or react dangerously with other substances.

**oxidizer.** Gas, solid, or liquid that provides or yields oxygen that may cause or contribute to the combustion of other materials.

**oxidizing gas.** Any gas which may, generally by providing oxygen, cause or contribute (more than air does) to the combustion of other material.

**oxidizing liquid.** A liquid which, while in itself not necessarily combustible, may, generally by yielding oxygen, cause or contribute to the combustion of other materials.

**oxidizing solid.** A solid which, while in itself is not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other materials.

**ozone layer.** A region located in the stratosphere several miles above the surface of the earth that shields humans and other life from harmful ultraviolet light from the sun. GHS includes "Chemicals Harmful to the Ozone Layer" as an environmental hazard under the exclamation mark pictogram: "Harms public health and the environment by destroying ozone in the upper atmosphere."

**Percent Volatile by Volume.** Refers to the percentage of a liquid or solid that evaporates at room temperature. The higher the percentage, the faster the substance will evaporate.

**Permissible Exposure Limit (PEL).** The legal exposure limit in the United States enforced by OSHA.

**pictogram.** Shape is a square set on a point, a white background, and a red frame sufficiently wide to be clearly visible. Black symbols within convey health, physical, and environmental hazard information assigned to a GHS hazard class and category.

**portable container.** Containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.

**Parts per million (Ppm).** A common unit of concentration of gases or vapor in air. For example, 1 ppm of a gas means that 1 unit of the gas is present for every 1 million units of air.

**precautionary statement.** A phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

**product identifier.** Name or identifier of product that is required to be identical on Label, SDS and in Inventory.

**pyrophoric gas.** A chemical in a gaseous state that will ignite spontaneously in air at a temperature of 130°F (54.4°C) or below.

**pyrophoric liquid.** A liquid which, even in small quantities, is liable to ignite within five minutes after coming into contact with air.

**Recommended Exposure Limit (REL).**

**reproductive toxicity.** Adverse effects on sexual function and fertility in adult males and females, and adverse effects on the development of offspring.

**respiratory sensitizer.** A chemical that induces hypersensitivity of the airways following inhalation of the chemical.

**respiratory tract irritant.** (Target organ toxicity-single exposure category) A chemical that causes transient (temporary) inflammation or irritation of the cells and/or mucous membranes in the nose, throat, larynx, bronchial passages, or lungs.

**Safety Data Sheet (SDS).** Written or printed material concerning a hazardous chemical that is prepared in accordance with paragraph (g) of the Hazard Communication Standard (29CFR §1910.1200).

**SDS.** See Safety Data Sheet.

**secondary container.** Container other than the original labeled shipping container that hazardous chemicals are transferred into.

**self-heating chemical.** A solid or liquid chemical, other than a pyrophoric liquid or solid, which, by reaction with air and without energy supply, is liable to self-heat; this chemical differs from a pyrophoric liquid or solid in that it will ignite only when in large amounts (kilograms) and after long periods of time (hours or days).

**self-reactive chemical.** Substances that are thermally unstable liquids or solids liable to undergo a strongly exothermic decomposition even without participation of oxygen (air). This definition excludes materials classified under the GHS as explosive, organic peroxide, or oxidizing.

**SKIN.** Notation means that contact with the skin, eyes, and moist tissues (for example, the mouth) can contribute to the overall exposure. Gloves may be needed to prevent absorption into skin. skin sensitizer. A chemical that will lead to an allergic response following skin contact.

**shipped container.** Container of hazardous chemicals leaving the manufacturer's workplace, required to be labeled, tagged, or marked according to the HCS specifications.

**signal word.** A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for the less severe. Both words will never be used at the same time, and at least one is always required.

**simple asphyxiant.** A substance or mixture that displaces oxygen in the ambient atmosphere and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death.

**solubility.** In water refers to the percentage by weight of the substance which can be dissolved in water. Less than 0.1% is considered negligible, 0.1-1% is slight, 1-10% is moderate, and more than 10% is appreciable.

**specific gravity.** A specific gravity greater than one indicates the substance will sink in water. A specific gravity less than one indicates it will float on top of water.

**stationary process container.** Process means any activity involving a highly hazardous chemical including any use, storage, manufacturing, handling, or the on-site movement of such chemicals, or combination of these activities. For purposes of this definition, any group of vessels which are interconnected and separate vessels which are located such that a highly hazardous chemical could be involved in a potential release shall be considered a single process.

**Short-Term Exposure Limit (STEL).** The average concentration to which workers can be exposed for a short period (usually 15 minutes) without experiencing irritation, long-term or irreversible tissue damage, or reduced alertness. Ceiling (C) exposure limit is the concentration which should not be exceeded at any time.

**target organ toxicity.** Specific, non-lethal target organ toxicity arising from a single exposure to a chemical, or from prolonged exposure to a chemical or mixture.

**Threshold Limit Value (TLV).** Exposure guidelines developed by the ACGIH.

**Time-Weighted Average (TWA).** The concentration of a chemical in the air for a normal 8-hour workday and 40-hour work week to which nearly all workers may be exposed day after day without harmful effects.

**US National Institute for Occupational Safety and Health (NIOSH).**

**vapor density.** The relative density or weight of a vapor or gas compared with an equal volume of air. A vapor density of less than one means the material will tend to rise in air. A vapor density of more than one means the material will tend to sink in air. Substances with high vapor densities pose a particular problem because they will collect along the floor and in the bottom of confined spaces.

**vapor pressure.** A high vapor pressure indicates that a liquid is volatile (meaning it will evaporate easily). This is important to know because it indicates that concentrations can build up quickly especially in an enclosed space or an area with poor ventilation.