

GLOSSARY OF TERMS

ACGIH - American Conference of Governmental Industrial Hygienists.

acid - A compound that reacts with bases neutralizing them and forming a salt. Acids have a pH of less than 7.0. They are corrosive to human tissue and are to be handled with care.

action level - An exposure level set by OSHA which is generally equal to one-half the value of the Permissible Exposure Limit (PEL).

acute exposure - A sudden or one-time exposure to a large dose of a hazardous material.

administrative controls - Any measure taken by management to reduce employees' Time-Weighted-Average exposures without involving engineering changes. These "administrative" measures may include such methods as worker rotation, housekeeping, training, or limiting the time spent performing a job function.

alkali - see "base"

autoignition temperature - The minimum temperature at which a substance will ignite in air when there is no other ignition source. For liquids, it is defined as the lowest temperature at which a drop of solvent will ignite spontaneously.

base, basic - A compound which reacts with an acid to form a salt and has a pH greater than 7.0. It attacks biological tissue by chemical action. Some examples are sodium hydroxide (NaOH) and potassium hydroxide (KOH).

°C - Degrees Celsius (See "Celsius").

carcinogen, carcinogenic - Any substance or agent capable of causing cancer. A chemical is considered to be a carcinogen if: (a) It has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen; or (b) It is listed as a carcinogen or potential carcinogen in the ANNUAL REPORT ON CARCINOGENS published by the National Toxicology Program (NTP) (latest edition); or (c) It is regulated by OSHA as a carcinogen.

CAS number - Chemical Abstract Service registry number.

caustic - See "base".

Celsius - (Degrees Celsius, Centigrade) A temperature scale in which water freezes at 0 °C and boils at 100 °C. A Celsius degree is 1/100th the difference between the temperature of melting ice and boiling water at 1.0 atmospheric pressure.

Centigrade - See "Celsius".

central nervous system - The part of the nervous system comprising the brain and the spinal cord.

chemical - Any element, chemical compound, or mixture of elements and/or compounds.

chronic exposure - An exposure to low-level sublethal concentrations of a substance over a prolonged period of time. A repeated and long-term exposure.

combustible, combustible liquid - A liquid with a flash point at or above 100 °F (37.8 °C), but below 200 °F (93.3 °C); except any mixture having components with flashpoints of 200 °F, or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

compressed gas - (a) A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi or 70 °F (21.1 °C); or (b) A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 °F (54.4 °C) regardless of the pressure at 70 °F (21.1 °C); or (3) A liquid having a vapor pressure exceeding 40 psi at 100 °F (37.8 °C) as determined by ASTM D-323-72.

corrosive - A chemical which causes visible destruction of, or irreversible alterations in, living tissues by chemical action at the site of contact.

decomposition products - Any of the new substances created by the breakdown (decomposition) of an original material into smaller components. This breakdown may be thermal, chemical, electrochemical, electromagnetic, etc.

engineering controls - Engineering measures taken to reduce employees' Time-Weighted-Average exposures involving equipment change, process change, ventilation, containment, isolation, etc.

explosive - A chemical that causes a sudden, almost instantaneous release of energy, pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

explosive limits - The range of concentrations over which a flammable vapor mixed with proper proportions of air will flash or explode if an ignition source is present. The range extends between two points designated lower explosive limit (LEL) and the upper explosive limit (UEL) and are expressed in percent by volume of vapor in air.

exposure - When an employee is subjected to a hazardous chemical in a course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.) and includes potential (e.g., accidental or possible) exposure.

°F - Degrees Fahrenheit. (See "Fahrenheit")

Fahrenheit - (Degrees Fahrenheit) A temperature scale in which water freezes at 32 °F and boils at 212 °F . A Fahrenheit degree is 1/180th the difference between the temperature of melting ice and boiling water at 1.0 atmospheres (atmospheric pressure at sea level, 14.7 psi).

flammable - Easily set on fire: any aerosol, gas, liquid, or solid which meets the specific physical criteria to be classified as "flammable." (6)

- (a) flammable aerosol - 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.
- (b) flammable gas (i) - A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen (13) percent by volume or less; or (ii) 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.

- (c) flammable liquid - Any liquid having a flashpoint below 100 °F (37.8 °C), except any mixture having components with flashpoints of 100 °F (37.8 °C) or higher, the total of which makes up 99 percent or more of the total volume of the mixture.
- (d) flammable solid - A solid, other than a blasting agent or explosive as defined in 29 CFR 1910.109(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 limits - See "explosive limits."

flash point - The lowest temperature in degrees Fahrenheit (°F) at which a liquid will give off enough flammable vapor to ignite. Since flash points vary according to how they are obtained, the method used must be listed. The methods used most extensively include: Tag Closed Cup (TCC); Pensky-Martens Closed Cup (PMCC); and Setaflash (SETA).

fume - An aerosol of very fine solid particles produced by recondensation from the vapor phase. An example of this is weld fume which is formed as vaporized metal recondenses in the air into very fine solid repairable particles.

gas - A state of matter in which the material has very low density and viscosity, can expand and contract greatly in response to changes in temperature and pressure; a gas easily diffuses into other gases, readily and uniformly distributing itself throughout any container.

hazard warning - Any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning which convey the hazards of the chemical(s) in the container(s).

hazardous chemical - Any chemical capable of causing injury or disease due to flammable, toxic, corrosive, radioactive, explosive, or reactive properties. Any chemical which meets the criteria of 29 CFR 1910.1200 (Hazard Communication Standard) as a physical hazard or a health hazard.

health hazard - A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or high toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.

highly toxic - A chemical falling within any of the following categories: (a) A chemical that has a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each. (b) A chemical that has a median lethal dose (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each. (c) A chemical that has a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

IDLH - Immediately dangerous to life or health.

ignition source - Any source (spark, flame, heat) with sufficient energy to ignite a flammable or combustible mixture.

ignition temperature - See "autoignition."

incompatibility (chemical) - Unsuitable for mixing, contact, or association due to undesirable reaction and effects.

industrial hygiene - The science that deals with the recognition, evaluation, and control of potential health hazards in the industrial environment.

inflammable - See "flammable."

ingestion - The process of taking substances into the body by mouth, such as food, drink, medicine, etc.

inhalation - The breathing in of vapors, gases, mists, aerosols, fumes, and/or dusts.

irritant - A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.

LEL - Lower explosive limit. See also "explosive limits."

LFL - Lower flammable limit.

liquid - A state of matter in which the substance is a formless fluid that flows in accordance with the law of gravity.

Material Safety Data Sheet (MSDS) - Written or printed material concerning a hazardous chemical as required by OSHA under Title 29 of the Code of Federal Regulations (CFR) 1910.1200 (Hazard Communication Standard).

mist - Suspended liquid droplets generated by condensation from the gaseous to the liquid state or by breaking up a liquid into a dispersed state, such as by splashing, foaming, or atomizing. Generally mists are formed when a finely divided liquid is suspended in air.

mixture - Any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction. A combination of two or more substances which may be separated by mechanical means. The components may not be uniformly dispersed.

mutagen - A chemical or physical effect which can alter genetic material in an organism and results in physical or functional changes in all subsequent generations.

nuisance particulates - General innocuous dust, not recognized as the direct cause of a serious pathological condition. Dust or other fine solids that are nuisances to the respiratory tract.

odor threshold - (human odor threshold) The minimum concentration of a substance in air which is necessary for detection by the human olfactory system.

OSHA - Usually refers to the Occupational Safety and Health Administration but sometimes is used for the Occupational Safety and Health Act.

oxidizer - A chemical other than a blasting agent or explosive as defined in 29 CFR 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

Permissible Exposure Limit (PEL) - Permissible Exposure Limit as required by OSHA regulation 29 CFR-1910.1000(e) Tables Z-1, Z-2, and Z-3. These are the Federally Regulated "legal" limits set at a level which is determined to be safe for an employee exposed for eight hours per day, 40 hours per week, for a "working lifetime."

personal protective equipment (PPE) - Any clothing or gear worn or used by an individual to protect against some external physical (chemical, noise, heat, electricity, dust, mist, fume, etc.) hazard. Examples of PPE are gloves, boots, respirators, hearing protection, coveralls, glasses, space suit, etc.

pH - A system used to express the degree of acidity or alkalinity of a solution. A pH of 7.0 is neutral.

physical hazard - A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

pyrophoric - Any liquid that ignites spontaneously in dry or moist air at or below 130 °F.

reactive material - A chemical substance or mixture that may vigorously polymerize, decompose, condense, or become self-reactive under conditions of shock, pressure, or temperature.

reproductive toxin - Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

self-contained breathing apparatus (SCBA) - Protective equipment that supplies fresh air to the user from some tank storage system, not filtered air as with a respirator.

sensitizer - A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical. If the first exposure does not cause a reaction, but subsequent exposures do, an individual has become sensitized.

smoke - An air suspension (aerosol) of particles, usually but not necessarily solid, often originating in a solid nucleus, formed from combustion or sublimation.

teratogen - An agent or factor that causes the production of physical defects in the developing embryo.

TLV - The Threshold Limit Value as recommended by the American Conference of Governmental Industrial Hygienists. Usually expressed as a time-weighted average (TWA), it is the concentration of a chemical in air (as vapor, mist, etc.) to which most workers can be exposed for a normal eight-hour work day, 40 hours a week, without experiencing adverse effects. Refer to entry on (SKIN) for additional information on certain chemicals.

TLV-C or TLV-CEILING - Threshold Limit Value-Ceiling. The workplace concentration of chemical in air that should not be exceeded even instantaneously.

TLV-STEL - Threshold Limit Value - Short Term Exposure Limit. The workplace concentration of a chemical in air (as vapor, mist, etc.) to which workers can be exposed continuously for a 15 minute period of time without suffering from: 1) irritation, 2) chronic or irreversible tissue damage, or 3) narcosis, provided the TLV-TWA is not exceeded. Exposures at the STEL should not be repeated more than four times per day, and there should be a minimum of 60 minutes between STEL exposures.

toxic - A substance that can produce injury or illness to man through ingestion, inhalation, or absorption; a poison.

A chemical falling within any of the following categories: (a) Chemical that has a median lethal dose (LD_{50}) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each, (b) Chemical that has a median lethal dose (LD_{50}) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each, (c) Chemical that has a median lethal concentration (LC_{50}) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams

UEL - Upper Explosive Limit. See also "explosive limits."

UFL - Upper Flammable Limit.

unstable - (reactive) A chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks pressure or temperature.

vapor - Matter brought to a gaseous state. That fraction of a liquid which will change to the vapor state even though conditions are such that the material should remain a liquid. Example: water boils at 212 °F, however; liquid water will become vapor (evaporate) from an open vessel at room temperature.

ventilation - General Ventilation - when the concentration of a contaminant in the exhaust air stream is not significantly higher than in the general room air.

- (a) natural general ventilation - when air movement through buildings and enclosures is controlled by wind and thermal convection.
- (b) mechanical general ventilation - when air movement through buildings and enclosures is controlled mechanically with fans designed to adequately distribute air, but not to ventilate any specific operation.

Local Exhaust Ventilation - when the concentration of contaminant in the exhaust air stream is significantly higher than that in the general room air. A local exhaust system is one in which the contaminant being controlled is captured at or near the place where it is created or dispersed. A local exhaust system usually includes the use of hoods or enclosures, ductwork leading to an exhaust fan, an air cleaning device for air pollution abatement and finally, discharged to the outside air.

water-reactive - A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.