

MATERIAL SAFETY DATA SHEET TERMS

ACGIH

American Conference of Governmental Industrial Hygienists, Inc.; an organization of professional personnel in governmental agencies or educational institutions engaged in occupational safety and health programs. ACGIH develops and publishes recommended occupational exposure limits (see TLV) for hundreds of chemical substances and physical agents.

Acute Toxicity

The adverse (acute) effects resulting from a single dose of, or exposure to, a substance. Ordinarily used to denote effects in experimental animals.

Alopecia

Loss of hair.

Analgesia

Loss of sensitivity to pain.

Anesthesia

Loss of sensation or feeling.

Anhydride

An oxide or compound that, when combined with water, gives an acid or base.

Anhydrous

Free of water.

Anorexia

Loss of appetite.

Anosmia

Loss of the sense of smell.

Anoxia

A lack of oxygen from inspired air (literally without oxygen). See Hypoxia.

Aqueous

A water-based solution.

Asphyxia

Lack of oxygen and thus interference with the oxygenation of the blood. Can lead to unconsciousness.

Asphyxiant

A vapor or gas that can cause unconsciousness or death by suffocation (lack of oxygen). Most simple asphyxiants are harmful to the body only when they become so concentrated that they reduce oxygen in the air (normally about 21%) to dangerous levels (18% or lower). Asphyxiation is one of the principal potential hazards of working in confined spaces.

Asphyxiation

A condition that causes asphyxia; suffocation.

Asthma

A disease characterized by recurrent attacks of dyspnea, wheezing, and perhaps coughing due to spasmodic contraction of the bronchioles.

Asymptomatic

Neither causing nor exhibiting symptoms. Ataxia A loss of muscular coordination.

Atrophy

A wasting or diminution in the size of tissues, organs, or the entire body.

Autoignition

The minimum temperature to which a Temperature substance must be heated without application of a flame or spark in order to cause that substance to ignite.

Bradycardia

A slow heartbeat. Pulse rate below 60.

Bronchitis

Inflammation of the bronchial tubes in the lungs.

Carcinogen

A substance determined to be cancer-producing or potentially cancer-producing by IARC, NIP, OSHA, the International Agency for Research on Cancer, or the National Toxicology Program.

Carcinoma

A malignant tumor or cancer; a new growth made up of epithelial cells, tending to infiltrate and give rise to metastases.

CAS

The CAS Registry number is a unique number assigned to a chemical by the Chemical Abstracts Service.

Cataract

A loss of transparency of the crystalline lens of the eye or of its capsule.

Chronic Health Effect

An adverse effect on a human or animal body, with symptoms that develop slowly over a long period of time or that recur frequently.

Chronic

Adverse (chronic) effects resulting from repeated doses of, or exposures to, a substance over a relatively prolonged period of time. Ordinarily used to denote effects in experimental animals.

Combustible

A term used by NFPA, DOT, and others to classify certain liquids that will burn, on a basis of flash points. Both NFPA and DOT generally define combustible liquids as having a flash point of 100oF (37.8oC) or higher. See also Flammable. Nonliquid substances such as wood and paper are classified as ordinary combustibles by NFPA.

Conjunctivitis

Inflammation of the conjunctiva, the delicate membrane that lines the eyelids and covers the eyeballs.

Corrosive

A chemical that causes visible destruction of, or irreversible alternations in, living tissue by chemical action at the site of contact; or in the case of leakage from its packaging, a liquid that has a severe corrosion rate on steel. A solid or liquid waste that exhibits a "characteristic or corrosivity," as defined by RCRA, may be regulated (by EPA) as a hazardous waste.

Cutaneous

Pertaining to the skin.

Cyanosis

A dark purplish coloration of the skin and the mucous membrane due to the deficient oxygenation of the blood.

Decomposition

Breakdown of a material or substance (by heat, chemical reaction, electrolysis, decay, or other processes) into parts or elements or simpler compounds.

Dermal

Used on or applied to the skin.

Dermal Toxicity

Adverse effects resulting from the skin's exposure to a substance. Ordinarily used to denote effects in experimental animals.

Dermatitis

Inflammation of the skin.

Diaphoresis

Perspiration.

Dyspnea

A sense of difficulty in breathing; shortness of breath.

Edema

An abnormal accumulation of clear, watery fluid in the tissues.

Electrolyte

Any substance that conducts an electric current in solution.

Embolism

Obstruction of a blood vessel by a transported clot, a mass of bacteria, or other foreign material.

Emphysema

A swelling or inflation due to presence of air in the connective tissues of the lungs.

Epistaxis

Nosebleed; hemorrhage from the nose.

Evaporation Rate

The rate at which a particular material will vaporize (evaporate) when compared to the rate of vaporization of a known material. The known material is usually normal butyl acetate (NBUAC or n-BuAc), with a vaporization rate designated as 1.0. Vaporization rates of other solvents or materials are then classified as: FAST evaporating if greater than 3.0. MEDIUM evaporating if 0.8 to 3.0. SLOW evaporating if less than 0.8.

Explosive

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

Fibrosis

Formation of fibrous tissue, as in a reparative or reactive process, in excess of amounts normally present.

Flammable

Describes any solid, liquid, vapor, or gas that will ignite easily and burn rapidly. A flammable liquid is defined by NFPA and DOT as a liquid with a flash point below 100oF (37.8oC).

Flammable Aerosol

An aerosol that yields a flame projection of 18 inches at the full valve opening, or a flashback at any degree of valve opening when tested per 16 CFR 1500.45.

Flammable Solids

Solids that will ignite readily or are liable to cause fires under ordinary conditions or transportation through friction or retained heat from manufacturing or processing, and that burn so vigorously and persistently as to create a serious transportation hazard, are classified by DOT as Flammable Solids. See also Combustible.

Flammable Limits

The minimum and maximum concentrations of a flammable gas or vapor between which ignition can occur. Concentrations below the lower flammable limit (LFL) are too lean to burn, while concentrations above the upper flammable limit (UFL) are too rich. All concentrations between LFL and UFL are in the flammable range, and special precautions are needed to prevent ignition or explosion.

Flash Point

Lowest temperature at which a flammable liquid gives off sufficient vapors to form a flammable mixture with air.

Gangrene

Death of tissue combined with putrefaction.

Gastroenteritis

Inflammation of the stomach and intestines.

Gingivitis

Inflammation of the gums.

Hematuria

The presence of blood in the urine.

Hepatic

Pertaining to the liver.

Highly Toxic

Having (a) an LD50 of 50 mg/kg or less when administered to albino rats weighing 200-300 grams each, (b) an LD50 of 200 mg/kg or less when administered by continuous contact for 24 hours with the bare skin of albino rabbits weighing 2-3 kilograms, or (c) an LC50 in air of 200 ppm or less (gas or vapor) or 2 mg/l or less (mist, fume, or dust) when administered by continuous inhalation for one hour to albino rats weighing 200-300 grams each.

Hygroscopic

Readily absorbs moisture from the air.

Hypergolic

Describing rocket fuel or propellant that consists of combinations of fuels and oxidizers that ignite spontaneously on contact.

Hypoxia

Insufficient oxygen especially applied to body cells.

IARC

International Agency for Research in Cancer.

Inflammation

A series of reactions produced in the tissues by an irritant, injury, or infection characterized by redness and swelling caused by an influx of blood and fluids.

Ingestion

The taking in of a substance through the mouth.

Inhalation

The breathing in of a substance in the form of a gas, vapor, fume, mist, or dust.

Iridocyclitis

Inflammation of both iris and ciliary body.

Irritant

A chemical that causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.

Jaundice

Yellowish discoloration of tissues (skin), whites of eyes (sclerae), and bodily fluids with bile pigment (bilirubin) caused by any of several pathological conditions that interrupt liver function.

Ketosis

The condition marked by excessive production or accumulation of ketone bodies in the body.

Lacrimation

Secretion and discharge of tears.

LC50 Lethal Concentration 50:

The concentration of a material in air that, on the basis of laboratory tests, is expected to kill 50% of a group of test animals when administered as a single exposure (usually 1 or 4 hours). The LC50 is expressed as parts of material per million parts of air, by volume (ppm) for gases and vapors, or as micrograms of material per liter of air ($\mu\text{g}/\text{L}$) or milligrams of material per cubic meter of air (mg/m^3) for dusts and mists, as well as for gases and vapors.

LD50 Lethal Dose 50:

A single dose of a material that, on the basis of laboratory tests, is expected to kill 50% of a group of test animals. The LD50 dose is usually expressed as milligrams or grams of material per kilogram of animal weight (mg/kg or g/kg).

Lesion

Abnormal change, injury, or damage to tissue or to an organ.

Leukemia

A progressive, malignant disease of the blood-forming organs.

Malaise

A feeling of general discomfort, distress, or uneasiness; an out-of-sorts feeling.

Mutagen

A chemical or physical agent that induces genetic mutations.

Narcosis

Stupor or unconsciousness produced by some narcotic drug.

Nausea

Tendency to vomit, feeling of sickness at the stomach.

Neoplasm

A new or abnormal growth of tissue in which the growth is uncontrollable and progressive.

Nystagmus

Spastic, involuntary motion of the eyeballs in a horizontal, rotary, or vertical direction.

Oliguria

Scanty or low volume of urine.

Oxidation

Literally, oxidation is a reaction in which a substance combines with oxygen provided by an oxidizer or oxidizing agent. An oxidation reaction may occur even when oxygen is not present. However, it may be defined, an oxidation reaction is always accompanied by an offsetting (balancing) reduction reaction.

Palpitation

Irregular, rapid heartbeat.

PEL

Permissible Exposure Limit: An exposure limit established by OSHA. May be a time-weighted average (TWA) limit or a maximum concentration exposure limit.

pH

The value that represents the acidity or alkalinity of an aqueous solution. Pure water has a pH of 7. The strongest acids have an excess of H⁺ and OH⁻ ions. For example, the strongest acids have an excess of H⁺ ions and a pH of 1 to 3 (HCl, pH=1). The strongest bases have an excess of OH⁻ ions and a pH of 11 to 13 (NaOH, pH = 12).

Phlegm

Thick mucous from the respiratory passages.

Pneumoconiosis

Respiratory tract and lung condition caused by inhalation and retention of respirable material.

Poison, Class A

A DOT term for extremely dangerous poisons such as poisonous gases or liquids of such a nature that a very small amount of the gas or vapor of the liquid mixed with air is dangerous to life. For example, phosgene, cyanogen, hydrocyanic acid, and nitrogen peroxide.

Poison, Class B

A DOT term for liquid, solid, paste, or semisolid substances other than Class A poisons or irritating materials that are known (or presumed on the basis of animal tests) to be so toxic to man as to afford a hazard to health during transportation.

Polymerization

A chemical reaction in which one or more small molecules combine to form larger molecules. A hazardous polymerization is such a reaction that takes place at a rate that releases large amounts of energy.

PPM

Parts Per Million. Used to specify the concentration (by volume) of a gas or vapour at low concentration, or a dissolved material at high dilution.

Prostration

Physical exhaustion and incapacitation.

Pulmonary Edema

Fluid in the lungs.

Respiratory System

The breathing system includes the lungs and air passages (trachea or "windpipe", larynx, mouth, and nose), as well as the associated nervous and circulatory supply.

Sclerae

The tough, white, fibrous covering of the eyeball.

Sensitization

An immune response reaction state in which further exposure elicits an immune or allergic response. A person previously exposed to a certain material is more sensitive when further contact with this material is encountered.

Sensitizer

A substance that, on first exposure, causes little or no reaction in man or test animals, but which on repeated exposure may cause a marked response not necessarily limited to the contact site. Skin sensitization is the most common form of sensitization in the industrial setting, although respiratory sensitization to a few chemicals is also known to occur.

"Skin"

Notation used to indicate possible significant contribution to overall exposure to a chemical by way of absorption through the skin, mucous membranes, and eyes by direct or airborne contact.

Spasm

An involuntary, convulsive muscular contraction.

STEL

Short-Term Exposure Limit: ACGIH terminology. See TLV-STEL.

Stupor

Partial or nearly complete unconsciousness.

Subcutaneous Systemic

Beneath the skin. Affecting the entire body.

Tachycardia

Excessively rapid heartbeat. Pulse rate above 100.

Target Organ Effects

Chemically caused effects upon organs and systems such as the liver, kidneys, nervous system, lungs, skin, and eyes from exposure to a material.

Teratogen

An agent or substance that causes physical defects in the developing embryo.

Tinnitus

A ringing or singing sound in the ears.

TLV

Threshold Limit Value: A term used by ACGIH to express the airborne concentration of a material to which nearly all persons can be exposed day after day without adverse effects. ACGIH expresses TLVs in three ways: TLV-TWA: The allowable Time-Weighted Average concentration for a normal 8-hour workday or 40-hour week.

TLV-STEL: The Short-Term Exposure Limit or maximum concentration for a continuous exposure period (maximum of four such periods per day, with at least 60 minutes between exposure periods, and provided that the daily TLV-TWA is not exceeded).

TLC-C: The Ceiling Exposure Limit - the concentration that should not be exceeded even instantaneously. See also "Skin."

Toxic

Having (a) an LD50 of 50-500 mg/kg when administered orally to albino rats weighing 200-300 grams each, (b) an LD50 of 200-1000 mg/kg when administered by continuous contact for 24 hours with the bare skin of albino rabbits weighing 2-3 kilograms each, or (c) an LC50 of 200-2000 ppm (gas or vapor) or 2-20 mg/l (mist, fume or dust) when administered by continuous inhalation for one hour to albino rats weighing 200-300 grams each.

TWA (Time Weighted Average)

This term is used in the specification of Occupational Exposure Limits (OELs) to define the average concentration of a chemical to which it is permissible to expose a worker over a period of time, typically 8 hours.

Urticaria

Nettle-rash; hives; elevated, itching, white patches.

Vertigo

A feeling of revolving in space; dizziness, giddiness.

Viscosity

Measurement of the flow properties of a material.