

# MSDS Glossary of Terms

**ACGIH** - American Conference of Governmental Industrial Hygienists

**Acid** - A corrosive compound with the following characteristics: Reacts with metals to yield hydrogen; reacts with bases to form salts; dissociates in water to yield hydrogen ions; has a pH <7.0 and neutralizes bases or alkalies.

**Acidosis** - Lowered blood and tissue alkalinity. Affects tissues and the central nervous system. May cause sickly sweet breath, headache, nausea, vomiting and visual disturbances.

**Acute Effect** - A rapidly developing adverse health effect with severe symptoms.

**Albuminuria** - Excess denatured albumins in the urine.

**Alkali** - A caustic compound with highly basic properties that: Readily ionizes in aqueous solution to yield OH anions; has a pH > 7.0. (Note: high concentrations of OH anions in solution destroys tissue by removing fluids or by corrosive deoxidation).

**Alkalosis** - A pathologic condition of decreased blood and tissue acidity.

**Alopecia** - Hair loss.

**Anemia** - Low levels of red blood cells and/or hemoglobin.

**Anesthetic** - An agent that causes total or partial loss of sensation.

**Angioneurotic** - Vascular neuropathy (neuropathy = functional disturbances and/or pathological changes in the peripheral nervous system).

**Anhydrous** - A substance with no H<sub>2</sub>O molecules in hydrate form, or as water of crystallization.

**Anorexia** - Appetite loss.

**Anuria** - Absence or defective excretion of urine.

**Apnea** - Cessation of breathing, asphyxia.

**Arrhythmia** - Any variation from the normal rhythm of the heart beat.

**Arthralgia** - Joint pain.

**Asphyxiation** - Suffocation.

**Asthma** - Recurrent attacks of paroxysmal dyspnea with wheezing from spasmodic bronchial contractions.

**Atelectasis** - Incomplete expansion of a lung or lung collapse.

**Autoignition** - The temperature at which a substance spontaneously ignites.

**Base** - A substance with the following characteristics: Releases OH anions in water; reacts with acids to form salts and water; has a pH >7.0, neutralizes acids and may be corrosive to tissue (feels "slippery").

**Boiling Point** - The temperature at which a liquid's vapor pressure equals the atmospheric pressure resulting in evaporation. Chemicals with low boiling points are often fire hazards.

**Bronchitis** - Inflammation of one or more bronchi.

**Bullae** - A large blister.

**C (TLV-ceiling)** - The chemical exposure concentration that should never be exceeded.

**Carcinogen** - A material that has caused cancer in either humans or in animals and is considered capable of causing cancer in humans.

**CAS number** - A registration number assigned to chemicals by the American Chemical Society.

**Cathartic** - Causes bowel evacuation.

**Caustic** - Corrosive, burning. A substance capable of destroying by corroding or eating away.

**Chronic effect** - An adverse health effect with symptoms that develop slowly over time, or that frequently recur.

**Combustible** - Combustible liquids have a flash point  $>37.8^{\circ}\text{C}$  ( $100^{\circ}\text{F}$ ) but  $<93.3^{\circ}\text{C}$  ( $200^{\circ}\text{F}$ ). Solid materials such as wood or paper are classified as ordinary combustibles.

**Comedo** - Blackhead. A plug of keratin and sebum within a dilated hair follicle. Often contains bacteria.

**Conjunctivitis** - Inflammation of the membrane that lines the eyelid and covers the cornea.

**Consolidation** - Process of solidification (e.g. lung air spaces filling with exudate in pneumonia.)

**Cornea** - The transparent structure of the external layer of the eyeball.

**Corrosive** - A substance that causes visible destruction or irreversible alterations in living tissue by chemical action at the site of contact.

**Coryza** - Acute inflammation of nasal mucous membrane with profuse discharge from nostrils.

**Cretinoid** - Characteristic appearance caused by lack of thyroid secretion. Arrested physical and mental development, dystrophy of bones and soft parts, and reduced basal metabolism.

**Cyanosis, Cyanotic** - Blood oxygen deficit causing discoloration of skin and mucous membranes.

**Deliquescent** - Water soluble salt that softens or dissolves by absorbing atmospheric moisture.

**Density** - The ratio of weight to volume (grams/cc) where water=1. See specific gravity.

**Dermatitis** - Skin inflammation.

**Desquamation** - The shedding of skin tissue in patches or sheets.

**Diuretic** - Increases urine excretion.

**D.O.T.** - Department of Transportation

**Dysphagia** - Difficulty in swallowing.

**Dyspnea** - Difficult or labored breathing.

**Edema** - Abnormal accumulation of clear, watery fluid in body tissue.

**Emesis** - Vomiting.

**Emetic** - An agent that induces vomiting.

**Emphysema** - Loss of elastic tissue in lungs resulting in overextension of alveolar spaces.

**Eosinophilia** - Accumulation of abnormally large numbers of white blood cells (eosinophils) in the

blood.

**Epigastric** - Pertaining to the upper middle region of the abdomen.

**EC<sub>50</sub>** - The median effective concentration of a material dissolved in water that is expected to affect 50% of a group of test animals.

**Erythema** - Capillary congestion resulting in abnormally red skin.

**Erythroderma** - Abnormal skin redness over wide areas; exfoliative dermatitis.

**Evaporation Rate** - The rate at which a material vaporizes from a liquid or solid state compared to the vaporization rate of a known standard (normal butyl acetate=1).

**Excoriation** - Scratch or abrasion.

**Expectorant** - Promoting the spitting of mucous or other fluids from the lungs and trachea.

**Explosive** - A material that abruptly releases pressure, gas and heat when subjected to sudden shock, pressure or high temperature.

**Exposure Limits** - Airborne chemical concentration limits believed to be safe for most workers.

**Fibrillation** - Rapid, randomized atrial or ventricular contractions causing an irregular, often rapid ventricular heart rate.

**Fire point** - The temperature at which a liquid produces enough vapor to flash near its surface and continue to burn. This value is usually 10-30°C (50-86°F) above the flash point.

**Flammable limits** - The concentration limits between which a flammable gas or vapor may ignite. Concentrations below the lower flammable limit (LFL) are too lean to burn, while those above the upper flammable limit (UFL) are too rich.

**Flash back** - When a trail of flammable material (usually solvent vapor) is ignited by a distant ignition source and the flame travels back to the fuel source.

**Flash point** - The lowest temperature at which a flammable liquid releases enough vapor to form an ignitable mixture with air.

**Full Protective Clothing** - Personal protective gear that prevents contact, inhalation or ingestion of gases, vapor, liquids and solids. Includes a self-contained breathing apparatus (SCBA).

**Fume (smoke)** - An airborne dispersion of minute particles caused by heating a solid.

**Gastric** - Pertaining to the stomach.

**Gastric lavage** - Cleansing the stomach using a tube and fluids.

**Gastritis** - Inflammation of the stomach.

**Gastrointestinal** - Pertaining to the stomach and intestine.

**Goiter** - Enlargement of the thyroid gland.

**Hazardous Material** - Any substance or combination of materials capable of adversely affecting human health or safety.

**Hematemesis** - Vomiting blood.

**Hemolysis, Hemolytic** - Separation of hemoglobin from red blood cells.

**Hemoptysis** - Spitting blood.

**Hemorrhage** - Bleeding.

**Hemorrhagic** - Tissue into which bleeding has occurred.

**Hepatomegaly** - Liver enlargement.

**Hygroscopic** - Easily absorbs atmospheric moisture.

**Hypocalcemia** - Abnormally low blood calcium levels.

**Hyperemia** - Excess blood (engorgement) in a localized area.

**Hypersensitive** - Individuals that react to contact with substances (allergens) at levels innocuous to normal (nonsensitized) individuals.

**Hypokalemia** - Abnormally low potassium levels in the blood. May cause neuromuscular disorders, weakness, paralysis, renal disease, gastrointestinal disorders and electrocardiography abnormalities.

**Hypotension** - Abnormally low blood pressure, often seen in shock victims.

**IARC** - International Agency for Research on Cancer.

**IDLH** - Immediately dangerous to life and health. **Note:** Choose a respirator for toxic vapors that allows 30 minutes to escape maximum concentrations without escape-impairing symptoms or irreversible health effects.

**Ignition Temperature** - The lowest temperature at which a combustible material will ignite in air and continue to burn independently of the heat source.

**IMO** - International Maritime Organization.

**Incompatible** - Describes materials capable of causing dangerous reactions and energy releases if in contact with each other.

**Infection** - The invasion and multiplication of microorganisms in body tissues.

**Ingestion** - Swallowing a substance.

**Inhalation** - Breathing a substance (may be gas, vapor, fume, mist or dust).

**Iodism** - Chronic iodine poisoning.

**IPR** - Intra peritoneal. Used in toxicological studies.

**Irritant** - Not corrosive, but causes a reversible inflammatory effect on living tissue by chemical action at the contact point. Severity depends upon concentration and exposure duration.

**IVN** - Intravenous. Used in toxicological studies.

**Jaundice** - Deposition of bile pigments in the skin, mucous membranes and sclera giving a yellowish appearance.

**Lacrimation** - Secretion and discharge of tears.

**Laryngitis** - Inflammation of the larynx.

**Latency Period** - The elapsed time between exposure and the manifestation of symptoms.

**Lavage** - Irrigating or washing out an organ (e.g. stomach).

**LCLO** - Lethal concentration low. Lowest airborne concentration reported to cause death in humans or animals. Acute exposures are <24 hours while chronic exposures are >24 hours.

**LC<sub>50</sub>** - Lethal concentration 50. The median concentration of an airborne material expected to kill 50%

of a group of test animals. Expressed as: Parts of a material per million parts of air (ppm); micrograms per liter of air (ug/L); or milligrams of material per cubic meter of air (mg/m<sup>3</sup>).

**LD<sub>50</sub>** - Lethal dose 50. The median dose of a material, by any route but inhalation that kills 50% of a group of test animals. Usually expressed as milligrams or grams of material per kilogram of animal weight.

**LDLO** - Lethal dose low. The lowest dose (other than LD<sub>50</sub>) of a substance introduced by any route other than inhalation that has caused death.

**(LEL) Lower explosive limit, (LFL) Lower flammable limit** - The lowest concentration of gas or vapor in air that will explode or burn if an ignition source is present.

**Lymphocytosis** - Excess of normal lymphocytes in blood or other effusion.

**Manganism** - Manganese poisoning. Usually caused by inhalation of manganese dust. Characterized by mental disorders, respiratory inflammation and a condition resembling Parkinson's disease.

**Melting point** - The temperature at which a solid changes to a liquid.

**Methemoglobinemia** - Cyanosis caused by methemoglobin in the blood.

**Miscible** - The ability to mix or blend gases or liquids.

**Mole** - The quantity (in grams) of a chemical which equals the molecular weight. This amount equals  $6.023 \times 10^{23}$  molecules (Avogadro's number) of the substance (e.g. sodium chloride has a molecular weight of 58.5 so one mole of salt equals 58.5 g).

**Molecular weight** - The mass (in grams) per mole of a substance.

**MSDS** - Material Safety Data Sheet. OSHA established guidelines for descriptive information to be provided on each MSDS which are the basis for required hazard communication programs.

**Mucous membrane** - The mucous-secreting membrane that lines hollow organs of the body (respiratory, pulmonary and urinogenital tracts).

**Mutagen** - A material that induces genetic changes into chromosomal DNA.

**Myalgia** - Muscle pain.

**Myxedema** - Condition characterized by a dry, waxy swelling of deposits of mucin in the skin and other tissues. Associated with hypothyroidism.

**Narcosis** - Stupor or unconsciousness produced by chemical exposure.

**Narcotic** - An agent that produces insensibility or stupor.

**Necrosis** - Localized cell, tissue, or organ death. The changes associated with cell death caused by the degrading action of enzymes.

**Nausea** - A feeling of sickness leading to a tendency to vomit.

**Nephritis** - An inflammation of the kidney.

**Nephrotoxin** - A poison which destroys kidney cells.

**Neutralize** - To make chemically harmless, or neutral (pH=7) by adding acid to a basic compound or base to an acidic compound.

**NIOSH** - National Institute Of Occupational Safety & Health

**NTP** - National Toxicology Program.

**Oliguria** - Diminished urine output in relation to fluid intake.

**OSHA** - Occupational Safety & Health Administration - U.S. Government.

**Oxidation** - A reaction where a substance combines with oxygen produced by an oxidizer or oxidizing agent. It is always balanced by a reduction reaction where oxygen is removed from a compound or atoms as molecules or ions gain electrons.

**Oxidizer** - A substance that yields oxygen.

**Oxidizing agent** - A substance that brings about an oxidation reaction.

**Palpitation** - A subjective feeling of an abnormally irregular or rapid heart rate.

**Paresthesia** - An abnormal sensation such as burning, prickling, tingling or creeping on the skin that has no objective cause.

**Parotitis** - Inflammation of the parotid gland.

**PEL** - Permissible exposure limit established by OSHA. Expressed as a time-weighted average (TWA) or a ceiling exposure limit that must never be exceeded instantaneously even if the TWA exposure is not violated. OSHA PEL's have the force of law.

**pH** - The value representing acidity or alkalinity of an aqueous solution equal to the logarithm (base 10) of the reciprocal of the hydrogen ion concentration of a solution. Pure water has a pH of 7 (neutral).

**Pharyngitis** - Inflammation of the pharynx.

**Photosensitization** - Developing an abnormally heightened reactivity to light.

**Polymerization** - A reaction where a chemical's molecules combine to form larger molecules. A hazardous polymerization releases large amounts of energy that may result in a fire or explosion.

**Pneumonia** - Inflammation of the lungs with consolidation.

**Pneumonitis** - Inflammation of the lungs.

**Pneumonociosis** - Permanent deposition of substantial amounts of particulate matter in the lungs.

**PPM** - Parts per million.

**Pulmonary** - Pertaining to the lungs.

**Purgative** - Cathartic, causing evacuation of the bowels.

**Pyloric** - Pertaining to the distal aperture of the stomach through which the stomach contents are emptied into the intestines.

**RCRA** - Resource Conservation and Recovery Act (hazardous waste disposal).

**Reactive Hazard** - The ability of a chemical to change or react with another agent thereby causing undesirable or dangerous effects such as heat, explosion or toxic emissions.

**Reducing Agent** - A reduction reaction is always balanced by an oxidation reaction. The reducing agent is the substance that combines with oxygen or loses electrons to the reaction.

**Renal** - Pertaining to the kidney.

**Rhinitis** - Inflammation of the nasal mucous membrane.

**Routes of Entry** - The methods by which a chemical enters the body: Absorption (eye or skin contact)

ingestion, inhalation and accidental injection (cuts).

**RTECS** - Registry of Toxic Effects of Chemical Substances, published by NIOSH .

**Rubefacient** - An agent that causes skin to redden. Active rubefacient occurs when an excess of blood occurs because of local or general relaxation of the arterioles. Passive rubefacient occurs when an excess of blood results from obstructing its outflow.

**SCU** - Subcutaneous. Used in toxicology reports.

**Sensitization** - A hypersensitive reaction that occurs with repeated exposure to an allergen.

**Sensitizer** - A material that causes limited reaction on 1st exposure but repeated contact may cause a marked, possibly systemic, response.

**Septum** - A dividing wall or partition.

**Slurry** - A pourable mixture of solid and liquid.

**Solubility in Water** - The percent by weight of a material that dissolves in water at room temp.

**Solution** - A uniformly dispersed mixture of solvent and dissolved solute.

**Solvent** - From the Latin for "set free" or "loosen". A material that can dissolve (reduce to molecular form) other materials to form a uniform mixture.

**Specific Gravity** - A ratio: The mass of a body to the mass of an equal volume of water at 4°C.

**Sputum** - Matter ejected from the respiratory system through the mouth.

**STEL** - The short-term exposure limit or maximum concentration for a continuous 15 minute exposure (four periods allowed per day, with at least an hour between exposure periods and provided the daily TLV-TWA is not exceeded).

**STEV** - Short-term exposure value.

**Stomatitis** - Inflammation of the oral mucosa.

**Sublime** - To change from a solid to a vapor without passing through a liquid phase.

**Tachycardia** - Excessive rapidity of the heart.

**TCLO** - Toxic concentration, low. The lowest airborne concentration which has produced toxic effects in humans or tumorigenic or reproductive effects in animals or humans.

**Teratogen** - An agent that causes physical defects in the developing embryo.

**TLEV** - Threshold limit exposure value.

**TLm** - Median tolerance limit. Designates the concentration of a toxic material at which 50% of the test organisms (usually aquatic) survive.

**TLV** - Threshold limit value. This term expresses the airborne concentration of a material to which healthy workers can be routinely exposed without adverse effects. The young, old, ill or naturally susceptible have lower tolerances and need additional protection.

**TLV-TWA** - Threshold limit value-time-weighted average. Usually timed over an 8 hour work day or 40 hour work week.

**Toxicant** - A poisonous agent.

**Toxin** - Poison. Often refers specifically to proteins produced by plants, animals and bacteria which are highly toxic to other living organisms.

**TWA (TLV-TWA)** - The allowable time-weighted average concentration for a normal 8-hr workday or 40 hour work week.

**(UEL) Upper explosive limit, (UFL) Upper flammable limit** - Upper explosive or upper flammability limit. The highest concentration of a material in air that will produce an explosion in fire or will ignite when it contacts an ignition source. A higher concentration of the material in a smaller percentage of air may be too rich to be ignited.

**Urticaria** - A vascular reaction of the skin showing localized edema and marked by the development of wheals (raised, itching red areas typical of an allergic response.)

**Vapor Density** - Gas of vapor weight compared to the weight of an equal volume of air.

**Vapor Pressure** - The pressure exerted by a saturated vapor above its own liquid in a closed container.

**Ventricular** - Pertaining to one of the ventricles of the heart.

**Vertigo** - An illusion of movement, as in the external world revolving around the victim.

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