SDS DEFINITIONS

ACGIH TLV: American Conference of Government Industrial Hygienists threshold limit value - Refers to airborne concentrations of substances and represents conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse health effects.

CARCINOGEN: A material that either causes cancer in humans, or, because it causes cancer in animals, is considered capable of causing cancer in humans.

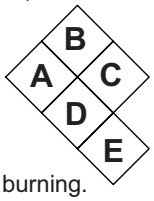
CAS Registration Number, CAS, CAS RN: An assigned number used to identify a chemical. CAS stands for Chemical Abstracts Service, an organization that indexes information published in Chemical Abstracts by the American Chemical Society and that provides index guides by which information about a particular substances may be located in the abstracts. Sequentially assigned by CAS numbers identify specific chemicals, except when followed by an asterisk (*) which signifies a compound (often naturally occurring) of variable composition. The numbers have no chemical significance. The CAS number is a concise, unique means of material identification.

CFC: Chlorofluorocarbon. Associated with damage to the earth's ozone layer.

CHEMTREC: Chemical Transportation Emergency Center. Established in Washington, DC, by the Chemical Manufacturers Association (CMA) to provide emergency information on materials involved in transportation accidents. Twenty-four-hour number 1-800-424-9300.

FIRE DIAMOND (NFPA Hazard Rating): Per "NFPA 704" publication. Visual system that provides a general idea of the inherent hazards, and their severity, of materials relating to fire prevention, exposure and control. Preferred reading order: Health, Flammability, Reactivity, Special.

Position A - Health Hazard (Blue). Degree of hazard; level of short-term protection.



0= Ordinary Combustible Hazards in a fire
1= Slightly Hazardous
2= Hazardous
3= Extreme Danger
4= Deadly

Position B - Flammability (Red) Susceptibility to burning.
0= Will Not Burn
1= Will Ignite if Preheated
2= Will Ignite if Moderately Heated
3= Will Ignite at Most Ambient Conditions
4= Burns Readily at Ambient Conditions

Position C - Reactivity, Instability (yellow). Energy released if burned, decomposed, or mixed.
0= Stable and Not Reactive with Water
1= Unstable if Heated
2= Violent Chemical Change
3= Shock and Heat May Detonate
4= May Detonate

Position D - Special Hazard (White)

Position E - If two specific hazards exist.
OXY = Oxidizer
ACID = Acid
ALKALI = Alkali
COR = Corrosive
W = Use No Water, reacts!
☢ = Radiation Hazard

Flammable: A chemical that includes one of the following categories:
a) "Aerosol, flammable." 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 the valve opening
b) "Gas, Flammable." (1) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or (2) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit.
c) "Liquid, flammable." Any liquid having a flash point 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 make up 99 percent or more of the total volume of the mixture.
d) "Solid, flammable." A solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retaining heat from manufacturing processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A substance is 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 it's major axis.

FLASHPOINT, FP: The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested by the following methods:
a) Tagliabue Closed Tester (see American National Standard Method of Test for Flash Point by Closed Tag Tester, Z11.24-1979 [ASTM D 56-79]).
b) Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979[ASTM D 93-79]).
c) Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester [ASTM D 3278-78]).

Highly Toxic: A chemical in any of the following categories:
a) A chemical with a median lethal dose (LD50) 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 with a median lethal dose (LD50) 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 rabbit weighing between 2 and 3 kilograms each.
c) A chemical with a median lethal concentration (LC50) 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 1 hour) to albino rats weighing between 200 and 300 grams each.

HMIS RATING: Hazardous Material Identification System - Rating system developed by the National Paint and Coatings Association to provide employees with a quick identification of the hazards associated with workplace materials.

IARC: International Agency for Research on Cancer.

LC: Lethal concentration is the concentration of a substance being tested that will kill.

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LCL: Lethal Concentration Low, the lowest concentration of a gas or vapor capable of killing a specified species over a specified time.

LDL: Lethal Dose Low, is the lowest administered dose of a material capable of killing a specified test species.

LD: Lethal dose is the quantity of a substance being tested that will kill.

LDL: Lethal Dose Low, lowest administered dose of a material capable of killing a specified test species.

LD50: A single dose of material expected to kill 50 percent of a group of test animals. The LD50 dose is usually expressed as milligrams or grams of material per kilogram of animal body weight. The material may be administered by mouth or applied to the skin.

LEL or LFL: Lower Explosive Limit, or Lower Flammable Limit, of a vapor or gas. The lowest concentration (lowest percentage of the substance in air) that will produce a flash or fire when an ignition source (heat, arc, or flame) is present. At concentrations lower than the LEL, the mixture is too "lean" to burn.

MSDS: Material Safety Data Sheet. OSHA has established guidelines for the descriptive data that should be concisely provided on a data sheet to serve as the basis for written hazard communication programs. The thrust of the law is to have those who make, distribute, and use hazardous materials be responsible for effective communication.

NFPA RATING: National Fire Protection Association - Rating system intended to give basic information to fire fighting and emergency personnel in a fire situation.

NIOSH: National Institute for Occupational Safety and Health.

NOC: Not otherwise classified.

NTP: National Toxicology Program.

Odor Threshold: The lowest concentration of a substance's vapor, in air, that can be smelled.

OSHA PEL: Occupational Safety and Health Administration Permissible Exposure Limit.

PEL: Permissible Exposure Limit is an occupational exposure limit established by OSHA's regulatory authority. It may be a time-weighted average (TWA) limit or a maximum concentration exposure limit.

PMCC: Pensky-Martens Closed Cup Flash Point test method.

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. If hazardous polymerization can occur with a given material, the MSDS usually will list conditions that could start the reaction and since the material usually contains a polymerization inhibitor, the length of time during which the inhibitor will be effective.

PPB: Parts Per Billion is the concentration of a gas or vapor in air - parts (by volume) of the gas or vapor in a billion parts of air. Usually used to express extremely low concentrations of unusually toxic gases or vapors; also the concentration of a particular substance in liquid or solid.

PPM: Parts per million. "Parts of vapor or gas per million parts of contaminated air by volume at 25°C and 1 torr pressure (ACGIH). At 25°C, ppm = (mg/m^3x24.45) divided by molecular weight.

Pyrophoric: A chemical that will ignite spontaneously in air at a temperature of 130°F (54.4°C) or below.

Reactivity: Chemical reaction with the release of energy. Undesirable effects such as pressure buildup, temperature increase, formation of noxious, toxic, or corrosive by-products may occur because of the reactivity of a substance to heating, burning, direct contact with other materials, or other conditions in use or storage.

REL: The NIOSH REL (Recommended Exposure Limit) is the highest allowable airborne concentration which is not expected to injure the workers. It may be expressed as a ceiling limit or as a time-weighted average (TWA).

SDS: Safety Data Sheet. OSHA has established guidelines for the descriptive data that should be concisely provided on a data sheet to serve as the basis for written hazard communication programs. The thrust of the law is to have those who make, distribute, and use hazardous materials be responsible for effective communication.

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.

STEL: Short-Term Exposure Limit - Usually a 15-minute time-weighted average exposure that should not be exceeded at any time during a workday.

TCC: Tag Closed-Cup test method. An ASTM test method of determining flashpoint. Since our aerosols are not tested as a mixture using the TCC method, we are required to show the lowest component chemical flashpoint in the untested mixture.

TCL: Toxic Concentration Low, the lowest concentration of a gas or vapor capable of producing a defined toxic effect in a specified test species over a specified time.

TLV: Threshold Limit Value is a term used by ACGIH to express the airborne concentration of material to which nearly all persons can be exposed day after day without adverse effects. TLV's are expressed in three different ways:

- **TLV-TWA:** The allowable Time Weighted Average concentration for a normal 8 hour workday.
- **TLV-STEL:** The Short Term Exposure Limit, or maximum concentration for a continuous 15 minute exposure period (maximum of four such periods per day, with at least 60 minutes between exposure periods and provided the daily TLV-TWA is not exceeded).
- **TLV-C:** The Ceiling exposure limit, the concentration that should not be exceeded even instantaneously.

TOC: Tag Open-Cup test method.

TWA: Time Weighted Average

VISCOSITY: Measurement of the flow properties of a material expressed as its resistance to flow. Unit of measurement and temperature are not included.

VOC: Volatile organic compounds. Used in coatings and paint because they evaporate very rapidly. Regulated by EPA per Clean Water Act.

VOLATILITY: Measure of a material's tendency to vaporize or evaporate at ambient routine conditions.

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