

**Dewar** – Vessel which contains cryogenic liquefied gases.

**Dew Point** – The temperature at which the liquefaction of vapor begins; the term is usually applied to condensation of moisture from the water vapor in the atmosphere.

**Diameter Index Safety System (DISS)** – DISS outlet valves are generally used with high-purity products, toxics, and corrosives. Valves equipped with DISS outlet assignment provide a metal-to-metal seal that creates low particle generation, a permeation-free environment, and good leak integrity.

**Dopant** – An impurity usually added in small amounts to a pure substance to alter its properties.

**DOT ID Numbers** –

These are product identification numbers, assigned by the Department of Transportation (DOT) to assist members of fire and police departments in using the DOT Emergency Response Guidebook. DOT ID numbers contain two letters followed by four digits. The prefix UN (for United Nations) identifies products recognized throughout the world. Gaseous nitrogen, for example, is identified as UN 1066.

**Droop** – The decrease in outlet set pressure of a pressure regulator which results from an increase in flow rate. Essentially the reverse of lockup. See also “**Lockup**.”

**Eductor (Liquid Delivery) Tube** – A tube inside a cylinder or container attached to the cylinder valve which allows liquid product withdrawal from the cylinder.

**Effluent Splitter** – The part of the analytical instrument that splits the effluent stream into multiple detectors or some to vent for a lower volume of effluent.

**Environmental Protection Agency (EPA)** – This is a government agency that establishes environmental standards within the United States.

**EPA Hazard Categories** – The hazard categories used throughout this catalog as defined under EPA SARA Title III and 1910.1200 of Title 29 of the Code of Federal Regulations are as follows:

- “Immediate (Acute) Health Hazard” including highly toxic, corrosive, toxic, irritant, sensitizer, and other hazardous chemicals which cause an adverse effect to a target organ which manifests itself within a short period of time following a one-time, high exposure to the substance.
- “Delayed (Chronic) Health Hazard” including carcinogens and other hazardous chemicals which cause an adverse effect to a target organ which manifests itself after a long period of time following or during repeated contacts with the substance.
- “Fire Hazard” including flammable, combustible pyrophoric, and oxidizer.
- “Sudden Release of Pressure Hazard including explosive and compressed gas.
- “Reactive Hazard” including unstable reactive, organic peroxide, and water reactive.

**Exposure Limits** – Concentrations of substances (and conditions) under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effects. ACGIH limits are called TLV and OSHA exposure limits are called PEL. See “**Threshold Limit Value**.”

**Filling Density** – The percent ratio of the weight of gas in a container to the weight of water that the container will hold at 60 °F.

**Fire Hazard** – See “**EPA Hazard Categories**.”

**Flammable Gas** – (1) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13% 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% by volume regardless of the lower limit.

**Flammable Limits** – The concentration of flammable vapor in air, oxygen, or other oxidant that will propagate flame upon contact when provided with a source of ignition. The lower explosive limit (LEL) is the concentration below which a flame will not propagate; the upper explosive limit (UEL) is the concentration above which a flame will not propagate. A change in temperature or pressure may vary the flammable limits.

**Flammable Range** – The range over which a gas at NTP will form a flammable mixture with air.

**Flash Point** – The lowest temperature at which a flammable liquid will give off enough vapor at or near its surface to form an ignitable mixture with air.

**Flow Capacity** – The maximum flow capability of a control device established at a specific set of conditions.

**Fluid** – Any material or substance that changes shape uniformly in response to an external force imposed upon it. The term applies to liquids, gases and finely divided solids.

**Freezing Point** – The temperature at which a liquid solidifies. It is the temperature at which the liquid and solid states of a substance are in equilibrium at a given pressure (usually atmospheric). For pure substances, it is identical with the melting point of the solid form.

**Gross Weight** – The weight of a package plus the weight of its contents.

**Halocarbons** – Any hydrocarbon combined with any of the five (F2, Cl2, Br, I, At) elements in the V11A group of the periodic table.

**Heat of Adsorption** – The total heat involved in the adsorption process from zero adsorbate loading to some final adsorbate loading at a constant temperature (also called isothermal integral heat of adsorption).

**Heat of Fusion** – The heat energy required to transform one mole of substance from the liquid phase to the vapor phase at one atmosphere of pressure.

**Heat of Vaporization** – Heat required to convert a substance from the liquid to the gaseous state with no temperature change.

**Hydrocarbon** – An organic compound containing carbon and hydrogen.

**Immediate (Acute) Health Hazard** – See “**EPA Hazard Categories**.”

**Inert** – A material which, under normal temperatures and pressures, does not react with other materials.

**Inhibitor** – A compound (usually organic) that retards or stops an undesired chemical reaction such as corrosion, oxidation or polymerization.

**Inlet Pressure (P<sub>1</sub>; Supply Pressure; Upstream Pressure)** – The pressure of the fluid to the supply connection of a control device.

**Inorganic Substance** – Substances that do not contain carbon in their chemical structure.

**Irritant** – The ability of a chemical, which is not corrosive, to cause a reversible inflammatory effect on living tissue by chemical action at the site of contact.

**Isotopes** – Forms of an element that differ from one another in the mass of their atoms and in the properties dependent on that mass. Having the same atomic number and the same number of valence electrons, isotopes occupy the same position in the periodic table and have identical properties. They are distinguishable only by the small differences in atomic weight or by radioactive transformations.

**Kelvin (K)** – A unit of temperature related to the triple point of water.

**Liquified Compressed Gas** – A gas which, under the charged pressure, is partially liquid at a temperature of 70 °F (21.1 °C).

**Liquid Density** – The ratio of the mass of a liquid per unit volume at any definite temperature. It is usually expressed in pounds per gallon or pounds per cubic foot.

**Lockup** – The increase in outlet pressure of a pressure regulator that occurs when flow is stopped. Essentially the reverse of droop.

**Lower Explosive Limit (LEL)** – The minimum percent by volume of a gas which, when mixed with air at normal temperature and pressure, will form a flammable mixture. See “**Flammable Gas**.”

**Manifold** – A series of connectors to a common outlet allowing several cylinders to be used simultaneously.

**Material Safety Data Sheet (MSDS)** – An MSDS is a substance fact sheet containing characteristics and hazards of specific hazardous industrial material. Also, these data sheets provide precautionary information on safe handling of the material as well as emergency and first aid procedures.

**Maximum Operating Pressure** – The maximum allowable use pressure for which a system is designed. Also referred to as “working pressure.”

**Melting Point** – The temperature at which the solid and liquid phase of a substance are in equilibrium (normally specified at one atm).

**Micron** – One millionth of a meter.

**Mixture** – Any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

**Mole** – The weight of a substance equal numerically to its molecular weight. A gram-mole is the weight in grams equal to the molecular weight; a pound-mole is the weight in pounds equal to the molecular weight.

**Molecular Weight** – The sum of the atomic weights of all the constituent atoms in the molecule of an element or a compound.

**Nanogram (ng)** – One billionth of a gram (10<sup>-9</sup>).

**Nanometer (nm)** – One billionth of a meter (10<sup>-9</sup>).

**National Formulary (NF)** – A supplement to the United States Pharmacopoeia.

**Normal Boiling Point (nbp)** – The temperature at which the vapor pressure of a liquid reaches 760 mm of mercury.