

Normal Evaporation Rate (NER) – The degree of product loss from a cryogenic liquid container due to heat leak into the container as designed. The NER is checked by measuring the amount of product loss over a specified time and serves to confirm whether the insulation is still good or not.

Normal Temperature and Pressure (NTP) – A gas industry reference base. Normal temperature is 70 °F. Normal pressure is one atmosphere or 14,696 psia.

Occupational Safety and Health Administration (OSHA) – An organization within the U.S. Department of Labor which sets standards for employers to ensure safe and healthful working conditions for employees.

Outlet Pressure (P₂; Delivery Pressure; Downstream Pressure) – The pressure of the fluid from the discharge connection of a control device.

Oxidizer – A chemical reagent which causes oxidation of other substances and is thereby reduced.

Partial Pressure – In any gas mixture the total pressure is equal to the sum of the pressures (partial) which each gas would exert were it alone in the volume occupied by the mixture.

Parts Per Million (ppm) – A convenient means for expressing low concentrations. As applied to gases, ppm stands for moles per million moles. ppm by weight is expressed as pounds per million pounds. Ppm by volume is usually expressed in cubic feet per million cubic feet.

Permissible Exposure Limits (PEL) – See “Exposure Limit.”

Physical Hazard – Descriptive of 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.

Poison – A substance that in relatively small doses has an action, when it is ingested by, injected into, inhaled or absorbed by, or applied to a living organism, that either destroys life or impairs seriously the function of one or more organs or tissues.

Polymerization – A chemical reaction, usually carried out with a catalyst, heat or light, and often under high pressure, in which a large number of relatively simple molecules combine to form a chain-like macromolecule.

Proof Pressure – A test pressure applied to control devices to verify structural integrity. No deformation or excessive leakage is permitted at this pressure and the control device must function normally subsequent to this test. Normal industry standard is 1.5 times (150%) of working pressure. See also “Burst Pressure” and “Maximum Operating Pressure.”

Pyrophoric – The ability of a chemical to ignite spontaneously in air at a temperature of 130 °F or below.

Pyrophoric Gas – A gas that can spontaneously self-ignite when exposed to normal atmospheric conditions.

Rare Gas – Refers to those constituents of air which comprise less than 1% of air and are generally considered inert such as argon, helium, krypton, neon and xenon.

Reactive Hazard – See “EPA Hazard.”

Relief Valve – A type of pressure relief device which is designed to relieve excessive pressure, and to reclose and reseal to prevent further flow of gas from the cylinder after reseating pressure has been achieved.

Restrictive Flow Orifice (RFO) – A safety device placed in the outlet of a cylinder valve that is intended to limit the release rate of a hazardous gas to a maximum specified range in the event of the inadvertent opening of the valve or failure of the system downstream of the valve outlet.

Safety Relief Device – A safety device usually incorporated in a cylinder valve and actuated by excessive pressure or temperature, or both, at predetermined limits to avoid failure of the pressure vessel.

Self-Relieving (Self-Venting) – A feature incorporated in certain pressure reducing regulators which enables the unit to relieve the outlet pressure when adjusted in the decrease direction.

Sensitizer – The ability of a chemical to cause a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

Short Term Exposure Limit (STEL) – See “Threshold Limit Value – Short Term Exposure Limit.”

SKIN – The “SKIN” designation, used with the terms TLV-TWA and OSHA-PEL, indicates that cutaneous absorption may contribute to the overall exposure.

Solvent – A substance capable of dissolving another substance (solute) to form a uniformly dispersed mixture (solution) at the molecular or ionic size level.

Span Gas – Gases which are used as a reference point to span an analyzer.

Specific Gravity (Sp. Gr.) – The ratio of the weight of one substance compared to the weight of an equal volume of another substance which is used as a standard. Usually gases are compared to air (air = 1) while liquids and solids are compared to water (H₂O = 1).

Specific Heat – Amount of heat required to raise a unit mass of a substance one degree of temperature at either constant pressure (Cp) or constant volume (Cv).

Specific Heat Ratio – The ratio of specific heat at constant pressure (Cp) to the specific heat at constant volume (Cv).

Specific Volume (Sp. Vol.) – Volume occupied by a unit mass of a substance at a given temperature. It is usually expressed in cubic feet per pound or gallons per pound.

Spring Housing – See “Bonnet.”

Stainless Steel – Alloy steels containing high percentages of chromium, from less than 10% to more than 25%.

Standard Temperature and Pressure (STP) – An internationally accepted reference base. Standard temperature is OOC. Standard pressure is one atmosphere or 14.6960 psia.

Sublimation – The direct passage of a substance from solid to vapor without appearing in the intermediate (liquid) state. An example is solid carbon dioxide (dry ice) which vaporizes at room temperature.

Sudden Release of Pressure Hazard – See “EPA Hazard Categories.”

Tare Weight – The weight of an empty cylinder without cap and valve.

Threshold Limit Value (TLV) – TLV's are measures of toxicity established by ACGIH. The TLV of a substance refers, in general, to airborne concentrations at or below which nearly all workers may be repeatedly exposed without adverse effect.

Threshold Limit Value – Ceiling (TLV-Ceiling) – Refers to an airborne concentration that should not be exceeded even instantaneously.

Threshold Limit Value – Short Term Exposure Limit (TLV-STEL) – Refers to a 15 minute time-weighted average exposure which should not be exceeded at any time during a workday even if the time-weighted average is within the TLV. It supplements the 8 hour TLV-TWA for certain substances that produce acute effects on high, short term exposure.

Threshold Limit Value – Time Weighted Average (TLV-TWA) – Refers to the time-weighted average concentration for a normal 8 hour workday and a 40 hour workweek to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

Tied-Diaphragm – See “Attached Poppet.”

Tied-Seat – See “Attached Poppet.”

Total Hydrocarbon Content (THC) – THC is used to describe the quantity of the hydrocarbon impurities present. Usually expressed as methane equivalents.

Toxic – A substance that has the ability to produce injurious or lethal effects through its chemical interaction with the body.

Triple Point (tp) – The definite temperature and pressure for a pure substance at which the three phases (solid, liquid and vapor) coexist in equilibrium as an invariant system.

United Nations (UN) – See “DOT” ID Numbers.

United States Pharmacopeia (USP) – The official publication for drug product standards.

Unstable Reactive – The ability of a chemical in the pure state, or as produced or transported, to vigorously polymerize, decompose, condense, or become self-reactive under conditions of shock, pressure or temperature.

Upstream Pressure – See “Inlet Pressure.”

Vapor Pressure – The pressure characteristic at any given temperature of a vapor in equilibrium with its liquid or solid form.

Water Reactive – The ability of a chemical to react with water to release a gas that is either flammable or presents a health hazard.

Working Pressure – See “Maximum Operating Pressure.”

Zero Gas – Gases which are used as a reference point to “zero” an analyzer.