



Signs

Neon glossary

Accuwall Tubing – Trade name for EGL colored glass tubing. It is made from machine drawn soda lime tubing, which makes it easier to bend than standard hand drawn colored tubing. Available in red, orange, yellow, green, blue, and aquamarine glass colors. It is available with or without phosphor coatings.

Acetone – A volatile organic liquid commonly used to check for vacuum leaks and cleaning parts with a minimal amount of residue. Reagent Grade is best for minimizing residue when cleaning.

Age In – The initial lighting up of a neon lamp to achieve full brightness. The amount of time to ‘age in’ can vary widely.

Anneal – A process that prevents or removes strain by heating glass above a certain temperature and then cooling slowly in a very controlled manner. Used in glass manufacturing.

Apiezon Grease – Is a brand of high quality stopcock grease. Type ‘N’ is best for use in neon manifold stopcocks.

Artificial Gas – Refers to gases used for heating and fires other than natural gas, typical examples would be propane and butane.

Aspirator – Refers to a non-mechanical unit used to increase vacuum pumping speeds.

Ballast – Is a power source used for lighting lamps, a typical example would be to light T-12 fluorescent lamps. Also see transformer.

Barbed Fitting – A fitting that a rubber hose slips over. The barbs or ridges prevent the hose from sliding off.

Bellows Hose – A flexible stainless steel hose used for vacuum systems.

Bending Beam Breaks – A common type of glass break.

Black Light – An ultraviolet emitting light source.

Blow Hose – A small diameter hose used in neon bending. The glassblower puts one end in his mouth and connects the other end to a lamp. He will blow small amounts of air into the hot tube to keep the soft glass from collapsing.

Blower – The source of air for torches and burners in a neon sign shop.

Blue Gas – Is an EGL argon/neon gas mixture that contains mostly argon.

Bombarder – A very large transformer used in the processing of neon electrodes. Typically Available in 7,000 – 15,000 volt models.

Bombarding – Refers to the act of processing neon electrodes using the previously mentioned bombarder.

Break Seal – The seal at the end of a gas flask or bulb used to release the gas once it is connected to a neon processing manifold.

Bromo Blue – Refers to blue soda lime glass tubing such as EGL's Accuwall tubing

Burn In – See Age In.

Butyl Phthalate Oil – Oil that is used in E-Z read manometer gauge to measure fill pressure. It was chosen due to its low vapor pressure.

Cajun Fitting – Refers to a popular brand name of vacuum compression fitting.

Cannon Fire – Is a large burner used for softening or melting glass.

Celsius – Is the metric unit used to measure temperature. To convert to Fahrenheit multiply by 1.8 and then add 32.

CGA Fitting – Refers to a gas connector fitting which conforms to the Compressed Gas

Association's standards, which are recognized worldwide.

Choke – An electrical device that controls the output of a bombardier.

Cold Cathode Lamp – Is the name given to neon lamps with tubing diameters larger than 15 mm. Technically any lamp or sign with neon electrodes is a cold cathode lamp. Cold cathode lamps use high voltage and low current, making them very energy efficient.

Collar – Refers to the donut shaped ceramic insulator inserted into the end of an electrode shell to keep it centered and protects the end of the shell.

Color Temperature – Is a term used to describe the color of light from a source compared to a Blackbody. It is often described in degrees Kelvin (0 K).

Compression Fitting – A common fitting in which an inner o-ring is compressed by an outer nut to form a vacuum tight seal.

Compression Strain – Is a relatively harmless strain in which the outside of the glass is pushing on the inside of the glass.

Cross Fires – Is a set of small burners used to bend neon tubing.

Current – The flow of electric charge through a conductor. The unit of current is the Ampere or MilliAmp.

Degrees Kelvin – Is a unit of measure often used to describe a lamp's color temperature. It is also a unit of measure of temperature.

Diffusion Pump - Refers to a non-mechanical unit used to increase vacuum pumping speeds.

Double Back Bend – Refers to a neon glass bend in which the tubing is bent back 180 degrees.

Dow Corning Grease – Is a silicone based stopcock grease.

Dumet – Is a copper clad material used for electrode lead wires due to its compatibility with the expansion of glass.

Economizer – A device typically used with a ribbon burner to conserve gas while lit, but not in use.

Emission Coating – Is the coating placed on the inside electrode shell to protect the electrode shell during bombardment, as well as act as a source of free electrons to increase electrical conductivity of the neon lamp.

Electrode Shell – Refers to the metal cylinder inside the glass envelope of the electrode. It is the source of the electric discharge in the neon lamp.

Exhaust Tube – Is small diameter tubing typically used for connecting neon lamps to a vacuum source. Usually around five millimeters in diameter. See tubulation.

E-Z Read Gauge – Is EGL's U tube type oil manometer used for measuring fill pressure when neon lamps. Units are measured in millimeters of Hg (Mercury).

Ferrule – A ring that is compressed to make a vacuum tight seal in a compression type fitting.

Fill Pressure – Is the pressure of inert gas that is put in a neon lamp after processing.

Fire Polish – Refers to the smoothing of the rough cut ends of glass tubing using a set of fires. This helps to protect the ends of the tubing from breaking.

Flash Back – During bombarding the plasma arc stream goes into the manifold instead of between the electrodes (usually caused by poor processing technique).

Flex Lead – See stranded lead wire.

Fluorescence – A term used to describe the light emission given off by excitation of phosphors with Ultra -Violet light.

Flushing Oil – An oil commonly used to clean vacuum pumps between vacuum oil changes to optimize the vacuum pumps performance.

Flushing Gas – A gas, such as helium, which is used to preheat a neon lamp to remove impurities before final processing.

Foot Candles – A unit of measure of the luminous intensity of light.

Gas Ballast – A valve on a vacuum pump used to admit air in the compression stage of pumping. The gas ballast valve should be closed during normal pump operation. It is useful in removing air and moisture trapped in the vacuum oil.

Gas Transfer System – Refers to the system of valves and tubing which delivers inert gas from large gas cylinders or tanks to a connection on the neon processing manifold.

Glazing – See fire polishing.

Globe Valve – A common valve used in place of a needle valve. It doesn't have as fine of an adjustment capability as a needle valve. This means it takes fewer turns to open the valve.

Glyptol – A paint like substance used for detecting or repairing small vacuum leaks in seals.

Grab-Its – EGL's trade name for its plastic wireless tube supports.

GTO Cable – Electrical wire specifically designed to carry the high voltage of a neon transformer.

Hand Torch – A hand held pair of fires used in the melting of neon tubing.

Housings – Are glass or ceramic insulators that act as lamp sockets.

Hot Cathode Lamp – A lamp that uses coils and a ballast such as fluorescent light bulbs.

Index Oil – Oil used to enhance the ability to see strain in glass under a polariscope. It has about the same index of refraction as the glass being looked at.

Inert Gas – A gas that does not react with other substances. They include neon, argon, helium, krypton and xenon. They are also referred to as noble or rare gases.

Infra Red Pyrometer – Refers to non-contact temperature gauges that use infrared light to calculate temperature.

K-4 Gas - Is an EGL argon/neon gas mixture which contains mostly neon. It was designed to operate brightly in cold weather.

Kelvin – See degrees Kelvin.

KF Fitting – An ISO standard type metal vacuum flange. Consists of two flange ends, a centering ring and a clamp. Also known as QF and NW fittings.

Kold Kote – Refers to the EGL trade name for an alcohol base liquid phosphor coating. It is available in most colors. It has a poorer coating texture than standard phosphor coatings.

Krytox Grease – Refers to a brand of very high quality stopcock grease used for o-rings.

Lambert – Refers to a unit of measure of light luminance.

Lead Wires – Are the wires that suspend the electrode shell in the glass envelope and supply the electricity from the power source (transformer).

Lumens – The Standard International unit of measure of the luminous flux of light.

Lux - The Standard International unit of measure of the illuminance of light.

Magnetic Contactor – A high voltage switch typically used with a bombarder.

Manometer – a type of gauge that uses displacement of a liquid column to measure pressure. Examples would be an EZ-Read or Dubrovin gauge.

Map Measurer – A small mechanical device that can measure the total length of a curved irregular line. It is used to measure the amount of tubing footage needed to complete a sign that was drawn on a pattern.

Maxi-Vac System – EGL's trademark name for our borosilicate glass neon-processing manifold.

McLeod Gauge – A mercury filled gauge that can accurately measure vacuum.

Mercury Doser – A device that can repeatably dispense the same amount of mercury each time into a neon lamp.

Mercury Migration – Is a phenomenon when the mercury present in a lamp migrates to only one spot in the lamp, leaving the rest of the lamp dim.

Mica – Is a mineral used as an electrical insulator in some neon electrodes. It is usually a semi clear very thin rectangular sheet.

Micron – is a measure of vacuum equal to a millitorr.

Milli-Amp – Is the unit of measure of current used in neon electrode bombarding. It is to 0.001 amperes.

Milli-bar – Is the SI unit of vacuum measure.

Milli-torr – Is a measure of vacuum equal to 0.001 Torr. See Microns.

Mixer – A device used to mix gases for better combustion. It is necessary when using most neon burners and torches to produce a flame hot enough to melt glass.

MM of Hg – The preferred unit to measure fill pressure of gas. Is equal to a measure in millimeters of a column of mercury.

Natural Gas – Is the standard gas supplied by most cities through pipes in the street. It burns cooler than most artificial or bottled gases.

Needle Valve – Is a type of valve that provides very fine adjustment by requiring many turns to open it completely. Commonly used to meter the amount of gas needed for an application.

Neoprene Rubber – Is a chemically resistant rubber typically used in o-rings and as a gasket material.

Noble Gas – See inert gas.

Novial – Refers to yellow soda lime glass tubing such as EGL's Accuwall tubing.

NPT – refers to a widely used common pipe thread standard - National Pipe Thread.

O-Ring – Is a round gasket that is used as a vacuum seal.

Out Gassing – When trapped gases are released from a material under the conditions of vacuum or heat.

Pancake Heater – A flat circular electric heater commonly used with a diffusion pump.

Pantone Color – A color as listed in the internationally recognized standard established by the Pantone Company for precisely specifying a color.

Phosphor – A material which when excited with ultra-violet light emits a bright light.

Pirani Gauge – A type of vacuum gauge, which uses a coil, heated to a fixed temperature, to measure changes in vacuum.

Plasma Arc Stream – Is the stream of electrons that gives off ultra-violet light in a neon lamp.

Polariscope – A device that can see and measure the amount strain in a piece of glass by utilizing polarized light.

Propane – A very hot burning common artificial gas used in the neon industry when natural gas is not available.

PSI - Refers to the unit of measure of pressure Pounds per Square Inch.

Regenerative Blower – A type of blower very suitable for a neon shops air supply needs.

Regulator – A device which regulates and controls the flow of gas.

RF Generator – A device that generates a radio frequency capable of inductively heating metals to high temperatures quickly.

Ribbon Burner – A long flat burner capable of heating long sections of glass neon tubing.

Robbins Valve – Refers to the brand name of a very high quality needle valve used by EGL's gas transfer system.

Roots Blower -- A type of blower very suitable for a neon shops air supply needs.

Ruby -- Refers to red soda lime glass tubing such as EGL's Accuwall tubing

Side Tubulation – A style of evacuating a neon lamp during processing, without the use of a tubulated neon electrode. Exhaust tubing is spliced to the side of the lamp.

Sign Mate Tubing – Refers to EGL's trade name for phosphor coated lead glass neon tubing.

Snaking Defect – Neon lamp defect that causes a wiggling of the plasma arc stream. Often caused by impurities left due to incorrect processing of the neon lamp.

Soda Lime Glass – A common type of glass used in neon, especially overseas. Harder to heat and form than lead glass tubing.

Spark Coil Tester - A device that generates a spark that can be used to check glass tubing for leaks.

Stranded Wire – Is a three-piece construction electrode lead wire composed of a solid nickel piece, a dumet section and a very flexible stranded section made up of smaller wires braided together.

Stress & Strain – Terms used to describe forces applied to or trapped in a piece of glass.

Stopcock – A glass valve use on neon manifolds.

Swagelock – Refers to a popular brand of vacuum compression fittings and valves.

Swivel – a small fitting that attaches to a blow hose keeping it from tangling or twisting.

Tension Strain – A glass strain which pulls on the outside surface of the glass, weakening the glass and possibly causing a crack to occur.

Thermo- Couple (T/C) - A small surface contact device used to measure temperature.

Tip Off – A term that refers to the sealing and removal of excess exhaust tubing on a tubulated neon electrode by use of a hand torch.

Torr – A unit of measure of pressure / vacuum equal to one millimeter of Hg (mercury).

Transformer – A power source for neon lamps in which electricity is converted to high voltage and very low current.

Tube Support – A device that holds or mounts a neon lamp to a surface securely.

Tubulation – A piece of exhaust tubing formed in the pressed end of an electrode's glass envelope. It is used as a connection to vacuum and gas fill a neon lamp during processing. See exhaust tubing.

Ultra Torr Fitting – Refers to the brand name of a hand tight style of vacuum compression fitting.

Vacuum Pump – A device used by a neon shop to draw a vacuum on the inside of a neon lamp.

Variac – Refers to a variable output transformer used to control the choke on a neon bombardier.

Viton rubber - Is a highly chemically resistant rubber typically used in o-rings and as a gasket material.

Whitey Valve - Refers to a popular brand of vacuum needle valves.

Y-Piece – A 'Y' shaped piece connected to the end of a neon processing manifold (i.e. Maxi-Vac) that allows the pumping of two neon lamps at a time.