



For over 50 years, CGR Products has been converting all types of materials into finished parts. We have compiled an extensive glossary of terminology that is commonly used in the rubber industry.

---

**Abrasion Resistance** – The ability of a rubber material to withstand material loss or deterioration due to friction or wear.

**Accelerated Aging** – Tests run on rubber to find when it starts to breakdown when exposed to light, ozone, temperature and solvents.

**Accelerators** – Additives used to help accelerate the curing of rubber.

**Adhesion** – The process of adhering or bonding two substrates together.

**ANSI** – (American National Standards Institute) A Private non-profit that oversees the development and consensus of standards.

**ASTM International** – (American Society for Testing and Materials) Organization that develops international standards for many types of material.

**Blister** – A raised area or surface blemish caused by a pocket of air beneath the surface.

**Bond** – Force or ability for two objects to stick to each other. Can be accomplished by mechanical fasteners or chemically such as pressure sensitive adhesives or liquid adhesives.

**Buna N** – Material made of Butadiene and Acrylonitrile. Also commonly known as NBR or Nitrile. Excellent for oil resistance.

**Butyl** – Material made of Isobutylene and Isoprene. Commonly used with tire inner tubes.





**Calendaring** – Machinery used to turn uncured rubber compounds into sheets or rolls.

**Closed Cell Foam** – Foams made where the cell structure is closed and air cannot pass through.

**Coefficient of Friction** – Ratio of force needed to move a material over a surface to the total force pressing on the material.

**Compound** – Mixture of raw polymers, additives, and accelerators to make a rubber material. Compounds are used for many materials such as solid rubber, urethane foams, and open and closed cell sponge rubber.

**Compression** – The percent of loss of thickness when subjected to a given load.

**Compression Set** – The percent of thickness of the material that does not rebound back to the original thickness before the material is compressed.

**Conductive** – Having the ability to transmit heat or electricity.

**Deflashing** – Process used to remove excess rubber called flash. The flash is typically caused by the parting line when molding rubber. Cryogenic deflashing is a preferred method. It uses liquid nitrogen to freeze the flash and cause it to break away cleanly.

**Delamination** – When two bonded surfaces start to separate.

**Density** - Degree of consistency measured by the quantity of mass per unit volume.

**Durometer (Duro)** – Measurement used in the rubber industry to indicate the hardness of rubber.

**Dwell Time** – For adhesive bonding, this is the time allowed for the adhesive to make a successful bond to the substrate. Typically the longer the dwell time the greater the bonding strength.

**Elastomer** – Any material, such as natural or synthetic rubber, that is able to resume its original shape when a deforming force is removed. Typically a material in the rubber family, when fully cured at room temperature can be stretched repeatedly and immediately will return to its approximate initial length.

**Elongation** – An increase in length, shown as a percentage of the initial length.





**EPDM** – Material made of Ethylene Propylene Diene. Excellent ozone resistance.

**Flange Gasket** – A gasket used in a flange joint.

**Fluorocarbon** (FKM) - Material with excellent resistance to oils, chemicals, ozone and heat.

**Fluorosilicone** (FVMQ) – Silicone rubber with excellent resistance to chemicals, heat to 500F, and resists aging.

**Full Face Gasket** – A gasket covering a flange which also incorporates bolt holes.

**Gasket** – A material sandwiched between two surfaces that prevents the passage of matter through an opening or joint.

**Heat Aging** – Testing materials at higher temperatures to see the loss of physical properties. Also used to predict what happens over longer lengths of time at lower temperatures.

**Heat Sealing** – Joining materials or sealing edges using heat and pressure.

**ID** – Inside diameter of a circular item.

**ISO** – International Organization for Standards.

**Load Deflection** – Measuring the amount of load required to make a part move or deflect by a certain amount.

**Low Temperature Flexibility** – The ability of a rubber material to be flexed at low temperatures without loss of serviceability.

**LSR** – Liquid silicone rubber.

**MIL STD** – (Mil Spec) Military Standard.

**Modulus** – When testing rubber, the load necessary to produce a stated percentage of elongation, compression, or shear.





**Natural Rubber** – A raw form of rubber; composed of extracts from the Para rubber tree (Hevea Brasiliensis).

**Neoprene** – A synthetic rubber with great general purpose characteristics and chemical stability. Also known as Chloroprene or Polychloroprene.

**Nitrile (NBR)** - Material made of Butadiene and Acrylonitrile. Also commonly known as Buna N. Excellent for oil resistance.

**OD** – Outside Diameter of a circular item.

**Open Cell Foam** – Foams made where the cell structure is open for air to pass through freely.

**Outgassing** – In rubber products, this relates to the release of gasses that were trapped during the curing process. Over time these gasses permeate through the material into the atmosphere. Some outgassing (such as in closed cell foams) can be accelerated by post curing.

**Oxidation** – Surface cracks or deformations from exposure to ozone.

**Ozone Resistance** – The ability of rubber to hold up to exposure to ozone without cracking or deformations.

**Permeate** - The release of gasses or liquids through a solid material (i.e. air escaping from a sealed balloon).

**Plasticizer** – A substance added to the rubber compound mix to promote plasticity and flexibility.

**Polymer** – A substance that has a molecular structure consisting mainly of a large number of similar units bonded together. Can be synthetic or organic.

**Post Curing** – Process using ovens or autoclaves to heat material after it is cured. This is to help extract gasses and plasticizers to make a material more stable (i.e. reducing shrinkage in closed cell sponge).

**QS 9000** – Quality system used in the automotive industry.

**RMA** – Rubber Manufacturers Association (currently known as the USTMA – United States Tire Manufacturers Association). An organization that set standards (such as tolerances) specifically for the rubber industry.





**SAE** – Society of Automotive Engineers.

**SBR** – Styrene Butadiene rubber. These materials have good abrasion resistance.

**Set** – The amount of a rubber material that does not fully rebound to its original shape after the release of a load.

**Shelf Life** – The amount of time a rubber component or raw material can be stored without losing physical properties.

**Shrinkage** – The linear contraction of a rubber material or part. All rubber materials, both solid and sponge, shrink to some degree.

**Silicone** – Materials made up of siloxane. Excellent for heat resistance and FDA applications.

**Specific Gravity** – The ratio of the density of a material compared to the density of water at standard atmospheric pressure and room temperature.

**Sponge Rubber** – Cellular rubber consisting predominantly of cells made from a solid rubber compound. Gases are distributed through the rubber during the curing process creating air pockets.

**Tear Strength** – Measured as force, the maximum load required to tear apart a given material.

**Tensile Strength** – The maximum strength or tensile stress applied during stretching of a material to cause breaking.

**Thermoforming** – Process of forming a thermoplastic material into a three dimensional shape using a heated mold.

**Thermoplastic Rubber** – A material, usually plastic polymers, that will repeatedly soften when heated and stiffen when cooled. When heated, thermoplastics can be melted into a liquid.

**Tool** – A generic term to describe a physical object to make a part. Examples would be a mold, a steel rule die, or an extrusion die.

**Vulcanization** – An irreversible process which a rubber compound changes from uncured to cured. Under heat, pressure, and time, the rubber molecules become cross linked creating a permanent cured material.

