



Appendix

GLOSSARY OF TERMS

Abrasion Resistance—The ability of a rubber compound to withstand mechanical action—such as rubbing, scrapping, or erosion— which tends progressively to remove material from its surface.

Accelerator (of Vulcanization)—Any substance which hastens the vulcanization of rubber causing it to take place in shorter time or at a lower temperature.

Adhesion of Rubber to Metal—The strength of a bond formed between a metal surface and a natural or synthetic rubber compound.

Antioxidant—An organic substance which inhibits or retards oxidation and certain other kinds of aging.

Antiozonant—A substance that retards or prevents the appearance of cracks in rubber from the action of ozone when rubber is exposed under tension, either statically or dynamically, to air containing ozone.

Compression-Deflection Characteristics—If a compressive force acts on rubber which is free to be displaced in any direction, it will undergo elastic deformation, storing up its applied energy and returning some of it when the force has been removed.

Elongation—The extension between bench marks produced by a tensile force applied to a specimen, expressed as a percentage of the original distance between the marks.

Filler—Any compounding material, usually in powder form, added to rubber in a substantial volume to improve quality or lower cost.

Grain Effect—Mechanical anisotropy. A state of strain produced in raw rubber by rolling which causes the mechanical properties of the raw rubber to differ in value according to the direction in which they are measured.

Hardness—The relative resistance of rubber to the penetration (without puncturing) of a blunt point on its surface.

GLOSSARY OF TERMS CONTINUED

Modulus—In the physical testing of rubber, the ratio of stress to strain, that is, the load in pounds per square inch or kilograms per square centimeter of initial cross-sectional area necessary to produce a stated percentage elongation.

Oil Resistance (as applied to vulcanized elastomer compositions)—Resistance to change in size and shape and resistance to loss in physical (mechanical) properties due to contacts with or immersion in an oil.

Permeability of Rubber to Gases—Gases are soluble in natural and synthetic rubbers, and their diffusion velocities depend in part on their chemical nature as well as their solubility in the rubber.

Plasticity—The property possessed by certain solid materials of keeping the shape or form imparted to them by a deforming force.

Polymer—A polymer is a very long chain of units of monomers prepared by means of an addition and/or a condensation polymerization. The units may be the same or different. There are copolymers, dipolymers, tri- or terpolymers, quadripolymers, high polymers, etc. Natural rubber is a polymer of isoprene.

Tackiness—A sticky condition sometimes found in crude rubber, due to overheating in drying, exposure to sunlight, or contamination with deteriorating materials.

Tear Resistance—The force required to tear completely across a specially designed rubber test specimen, by elongating it at a specified rate.

Tensile Strength—The maximum tensile strength which a material is capable of developing. It is the force per unit of the original cross-sectional area which is applied at the time of rupture of a specimen, and is known variously as “breaking load”, “breaking stress”, and “ultimate tensile strength”. It is expressed in pounds per square inch or kilograms per square centimeter of cross-sectional area of the unstressed specimen.

GLOSSARY OF TERMS CONTINUED

Tensile Stress—The force per unit of original cross-sectional area required to stretch the specimen to a stated elongation.

Tension Set—The elongation remaining after a specimen has been stretched and held at a specified elongation for a given period of time.

Thermosetting—The property of a substance which undergoes a chemical change when heated, whereby a hardened non-thermoplastic product is formed.

Vulcanizing Agent—Any material which can produce in rubber the change in physical properties known as vulcanization.