

Elastomer Descriptions and Properties

Nitrile

(Buna-N)

Trade Names: Chemigum (Goodyear) Ny Syn (Copolymer) Krynac (Polysar)
Hycar (Zeon Chemical) Paracril (Uniroyal) Perbunan (Mobay)

The most widely used O-Ring elastomer. Excellent resistance to petroleum products. Excellent compression set, tear and abrasion resistance. Does not have good resistance to ozone, sunlight, or weather, unless specifically compounded. Should not be stored in direct sunlight or near motors or other electrical equipment which may generate ozone. Temperature range: -40° to +250°F.

Fluoroelastomer

Trade Names: Viton (E.I. duPont) Fluorel (3M)

Excellent mechanical and physical properties. Good resistance to petroleum products, low compression set, and high temperature resistance. Wide spectrum of chemical compatibility. Good for vacuum service and low gas permeability. Temperature range: -15° to +400°F (limited exposures to higher temperatures).

Chloroprene

(Neoprene)

Trade Names: Neoprene (E.I. duPont) Butachlor (Ditsugil) Bayprene (Mobay)

Moderately resistant to petroleum products. Good ozone and weather resistance. Good compression set. Excellent for sealing refrigeration fluids such as Freon®. Temperature range: -65° to +250°F.

Silicone

Trade Names: Silastic (Dow)

Recommended for applications requiring a wide temperature range and good dry heat resistance. Good weather and ozone resistance. Limited oil resistance. Not normally recommended for dynamic sealing applications due to relatively poor tensile and tear strength and relatively low abrasion resistance. Temperature range: -80° to +450°F.

Highly Saturated Nitrile

(HSN, HNBR)

Better resistance to high temperatures, superior physical properties, and improved chemical resistance over traditional nitrile compounds. It also has better resistance to ozone, sunlight, and other atmospheric conditions. Excellent resistance to compression set. Green HSN is used in refrigerant R134a applications. Temperature range: -40° to +325°F.



"CLEARLY THE BEST"

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Ethylene Propylene (EPM, EPDM, EPR)

Trade Names: Nordel (E.I. duPont) Royalene (Uniroyal) Epcar (B.F. Goodrich)
Vistalon (Exxon Chemical) Epsyn (Copolymer Rubber)

Excellent resistance to Skydrol® fluids used in commercial aircraft hydraulic systems. Also, recommended for hot water, steam, and phosphate ester type hydraulic fluids. Also resistant to some acids, alkalies, and ozone. Not recommended for petroleum fluids or diester lubricants. Temperature range: -65° to +300°F.

PTFE

Trade Names: Teflon® (E.I. duPont)

White thermoplastic fluoroethylene resin offers a combination of qualities not found in any other material-chemical inertness, heat resistance, low friction, dielectric strength, weatherability, zero water absorption, toughness, and flexibility. Temperature range: -65° to +500°F.

Aflas®

Trade Names: Aflas® (Asahi Glass Co., Ltd.)

Advantageous combination of high temperature, chemical and electrical resistance properties. Recommended for oils and lubricants, hydraulic and brake fluids, transmission and power steering fluids, sour oil and gas (H₂S), amine corrosion inhibitors, ozone, steam, acids, bases, alcohols, and a variety of other chemicals. Temperature range: -20° to +400°F. (+600°F short term).

Urethane (Polyurethane)

Trade Names: Texin (Miles Chemical) Cyanaprene (American Cyanamid)
Adiprene (Uniroyal) Pellethane (Dow Chemical)

Resistant to petroleum oils, hydrocarbon fuels, oxygen, ozone, and weathering. Particularly recommended for hydraulic systems where high pressures, shock loads, wide metal tolerances, or abrasive contamination is anticipated. Not recommended for acids, ketones, and chlorinated hydrocarbons. Some urethanes are also sensitive to water and humidity. Temperature range: -65° to +200°F.