

Comparative Properties of Typical Protective Coatings' Elastomers

ANSI / ASTM D1418-77	NR / IR	AU / EU	CR	NBR	CIIR	IIR	CSM	EPDM	FKM	SI	SBR	
Elastomer Common Name	Gum / Natural	Urethane	Neoprene	Nitrile / Buna-N	Chlorobutyl	Butyl	Hypalon®	EPDM / EPT	Viton® / Fluorel®	Silicone	GRS / Buna-S	
ASTM D-2000; SAE J-200 Military: MIL STD 417 Protective Coatings Code	AA RN G•R	BG SB U	BC-BE SC F•N	BF-BG-BK-CH SB J•P	AA-BA RS B•D•O	AA-BA RS B	CE SC H	BA-CA-DA RS E•Q	HK --- V	FC-FE-GE TA K	AA-BA RS S	
Chemical Name Definition	Polyisoprene	Polyester/ Polyester Urethane	Poly- Chloroprene	Butadiene Acrylo- Nitrile	Chloro- Isobutylene	Isobutylene Isoprene	Chloro- Sulfonated Polyethylene	Ethylene Propylene Polymer	Fluorinated Hydrocarbon	Poly- Siloxane	Styrene Butadiene	
Hardness Range: Durometer A Specific Gravity of Base Low Temp. - Min. Service °F High Temp. - Max. Service °F	30 - 90 0.93 -20 to -60 185	30 - 70D 1.02-1.20 -10 to -30 185	15 - 95 1.23 -10 to -50 220	40 - 95 1.00 +30 to -40 240	40 - 75 0.92 -10 to -60 250 to 300	40 - 75 0.92 -10 to -60 250 to 300	40 - 90 1.12 - 1.28 -30 to -60 275	30 - 90 0.86 -20 to -60 300	55 - 95 1.85 +10 to -10 400 to 600	20 - 85 1.14 - 2.05 -60 to -150 460	40 - 90 0.94 0 to -50 195	
RESISTANCE AND CHEMICAL PROPERTIES COMPARISON	Abrasion	Excellent	Outstanding	Excellent	Good	Good	Good	Excellent	Good to Excel.	Good	Poor	Good to Excel.
	Absorption, Water	Very Good	Good	Good	Good	Very Good	Very Good	Very Good	V. Good to Excel.	Very Good	Excellent	Good to V. Good
	Acid - Concentrated	Fair to Good	Poor	Good	Good	Good	Good	Very Good	Excellent	Good	Fair	Fair to Good
	Acid - Dilute	Fair to Good	Fair	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Fair to Good
	Adhesion to Fabrics	Excellent	V. Good to Excel.	Excellent	Good	Good	Good	Good	Good	Good to Excel.	Excellent	Good
	Adhesion to Metals	Excellent	Excellent	Excellent	Excellent	Good	Good	Excellent	Good to Excel.	Fair to Good	Excellent	Excellent
	Chemicals	Fair to Good	Fair	Fair to Good	Fair to Good	Excellent	Excellent	Excellent	Excellent	Excellent	Good to Excel.	Fair to Good
	Cold	Excellent	Excellent	Good	Fair to Good	Good	Good	Good	Excellent	Good	Outstanding	Very Good
	Dielectric Strength	Excellent	Excellent	Good	Poor	Excellent	Excellent	V. Good to Excel.	Excellent	Good	Good	Excellent
	Dynamic Properties	Excellent	Excellent	Fair	Good to Excel.	Fair	Fair	Fair	Good to Excel.	Good to Excel.	Poor	Good
	Electric Insulation	Good to Excel.	Fair to Good	Fair to Good	Poor	Good to Excel.	Good to Excel.	Good	Excellent	Fair to Good	Excellent	Good to Excel.
	Flame	Poor	Fair	Good	Poor	Poor	Poor	Good	Poor	Excellent	Fair to Good	Poor
	Heat	Good	Good	Very Good	Good	Very Good	Very Good	Excellent	Excellent	Outstanding	Outstanding	Fair to Good
	Heat Aging	Fair	Good	Good	Good	Very Good	Very Good	Very Good	Excellent	Outstanding	Outstanding	Fair to Good
	Hydrocarbons - Aliphatic	Poor	Good to Excel.	Fair to Good	Excellent	Poor	Poor	Fair to Good	Poor	Excellent	Poor	Poor
	Hydrocarbons - Aromatic	Poor	Fair to Good	Fair	Good	Poor	Poor	Fair	Poor	Excellent	Poor	Poor
	Hydrocarbons - Oxygenated	Fair to Good	Poor	Poor	Poor	Good	Good	Poor to Fair	Good to V. Good	Poor	Fair	Good
	Impermeability	Fairly Low	Fairly Low	Low	Low	Very Low	Very Low	Low to Very Low	Fairly Low	Very Low	Fairly Low	Fairly Low
	Oil - Animal & Vegetable Oil and Gasoline	Poor to Good	Good to Excel.	Good	Very Good	Very Good	Very Good	Good	Good	Excellent	Good to Excel.	Poor to Good
	Oxidation	Good	Excellent	V. Good to Excel.	Good	Excellent	Excellent	Excellent	Excellent	Outstanding	Outstanding	Fair
Ozone	Poor to Fair	Excellent	V. Good to Excel.	Fair	Excellent	Excellent	Outstanding	Outstanding	Outstanding	Excellent	Poor	
Radiation	Excellent	Very Good	Very Good	Very Good	Good	Good	Very Good	Very Good	Outstanding	Very Good	Excellent	
Rebound - Cold	Excellent	Good	Very Good	Good	Poor	Poor	Fair to Good	Very Good	Fair to Good	Excellent	Good	
Rebound - Hot	Excellent	Good	Very Good	Good	Very Good	Very Good	Good	Very Good	Good	Excellent	Good	
Set, Compression	Good	Fair	Fair to Good	Good	Fair	Fair	Fair	Good	Fair to Good	Fair	Good	
Solvents, Lacquer	Poor	Poor	Poor	Fair	Fair to Good	Fair to Good	Poor	Poor to Fair	Poor to Fair	Poor	Poor	
Steam	Fair to Good	Good	Fair	Fair to Good	Good	Good	Fair	Excellent	Fair to Good	Fair	Fair to Good	
Sunlight Aging	Poor	Good	Very Good	Poor	Very Good	Very Good	Outstanding	Outstanding	Outstanding	Excellent	Poor	
Swelling in Oil	Poor	Good to Excel.	Good	Very Good	Poor	Poor	Good to Exce.	Poor	Excellent	Fair	Poor	
Tear	Good to V. Good	Excellent	Good	Fair	Good	Good	Fair	Fair to Good	Fair	Poor	Fair	
Tensile Strength	Excellent	Excellent	Good	Good to Excel.	Good	Good	Fair	Good to Excel.	Good to Excel.	Poor	Good to Excel.	
Water	Fair to Good	Poor	Fair	Fair to Good	Good	Good	Fair	Excellent	Fair to Good	Fair	Fair to Good	
Weather	Fair	Excellent	Excellent	Fair	Good to Excel.	Good to Excel.	Excellent	Excellent	Excellent	Excellent	Fair	
Generally Resistant To:	Water, Air and Average Concentration Acids, Bases Alcohols, Salts, Keytones, Best Abrasion Resistance	Moderate Chemicals, Oils, Fats, Greases and Many Hydrocarbons	Moderate Acids and Chemicals, Ozone, Oils, Fats, and Many Solvents, Oily Abrasive Applications	Most Hydrocarbons, Fats, Oils, Greases, Hydraulic Fluids, Chemicals and Solvents	Animal and Vegetable: Oils, Fats, Greases, Air, Gas, Water, Many Oxidizing Chemicals and Ozone	Animal and Vegetable: Oils, Fats, Greases, Air, Gas, Water, Many Oxidizing Chemicals and Ozone	Strong Acids and Bases, Freons, Hydroxides, Ozone, Alcohols, Etching Alkaline and Hypochlorite Solutions	Vegetable and Animal: Fats, Oils, Ozone, Many Strong and Oxidizing Chemicals Keytones, Alcohols	All Aromatic, Aliphatic and Halogenated Hydrocarbons Many Acids, Animal and Vegetable Oils	Moderate or Oxidizing Chemicals Ozone, Concentrated Sodium Hydroxide	Water, Air, Anti-Freeze, Detergents, Salt Solutions, Bases, Alcohols and Some Acids	
Generally Effected or Attacked by:	Not for: Ozone, Strong Acids, Bases, Oils, Solvents, Most Hydrocarbons	Not for: Concentrated Acids, Keytones, Esters, Chlorinated and Nitro Hydrocarbons	Not for: Oxidizing Acids, Esters and Keytones, Aromatic Chlorinated and Nitro Hydrocarbons	Not for: Ozone, Keytones, Esters, Aldehydes, Nitro and Chlorinated Hydrocarbons, Polar Solvents MEK	Not for: Oils, Solvents, Aromatic Hydrocarbons	Not for: Oils, Solvents, Aromatic Hydrocarbons	Not for: Keytones, Esters, Certain Chlorinated Oxidizing Acids, Chlorinated, Nitro and Aromatic Hydrocarbons	Not for: Mineral Oils, Solvents, Aromatic Hydrocarbons	Not for: Keytones, Esters, and Nitro Containing Compounds	Not for: Many Solvents, Oils, Concentrated Acids, Sulfurs	Not for: Oils, Greases, Solvents and Hydrocarbons, Ozone and Strong Acids	



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NOTES: 1. Temperature rating depends upon Operating Pressure and if service is Continuous.

2. For resistance of a specific chemical, contact Protective Coatings, Inc. • Phone (260) 424-2900 • E-Mail: proco@fwi.com