



# GMI® ELASTOMER GUIDE and COMPARISON CHART

Elastomers can be Calendered, DieCut, Extruded, Laminated, LaserCut, LatheCut, Machined, Molded, PlasmaCut, Sliced/Slit and WaterJetCut.

## ELASTOMERS

**NBR (Buna-N/Nitrile)** has very good abrasion, gasoline, heat and oil resistance and permeability. Its resistance to acids and alkalis increase as the nitrile content of the compound increases. Nitrile must be specially compounded for resistance to natural aging, ozone and sunlight. It has poor resistance to oxygenated solvents. Nitrile is superior to neoprene in oils and solvent resistance but is not recommended for exposure in severe weather applications.

**EPDM (Ethylene-Propylene-Diene-Monomer)** is well known for its excellent aging, ozone and weathering resistance. It also has excellent steam and water resistance, maintains its flexibility at low temperatures, features excellent resistance to acids, alkalis and oxygenated solvents and is very color stable. It is not recommended for resistance to gasoline, hydrocarbon solvents and oils. It is found in a very broad range of applications and is excellent for outdoor applications.

**CR NEOPRENE (Polychloroprene)** has moderate resistance to gasoline and oils. It features good flame resistance, weathers well and has very good resistance to abrasion, acids, alkalis, and flex cracking. It has poor resistance to aromatic and oxygenated solvents and limited flexibility at low temperatures. Neoprene is considered an excellent all-purpose elastomer with a solid balance of properties and few limitations.

**VMQ (Silicone)** features excellent resistance to oxidation, ozone and sunlight and is very color stable. It maintains excellent flexibility at low temperatures, has outstanding resistance to high heat, low compression set and is a very good electrical insulator. It is not recommended for applications that require resistance to abrasion, acids, alkalis, cut growth, gasoline, high tensile strength, oils and tear growth.

**FKM (Viton® and other Fluoroelastomers)** provides premium performance and long-term reliability in extremely corrosive and severe environments. Its exceptional resistance to aging, heat and a broad range of chemicals, fuels and solvents make it ideal for a multiple of demanding applications. It also has excellent resistance to oxygen, ozone, sunlight and weather and is inherently more flame retardant than hydrocarbon rubbers. (Viton® is a registered trademark of DuPont Performance Elastomers)

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## PHYSICAL, CHEMICAL & OTHER PROPERTIES and COMPARISON GUIDE

Elastomer (Polymer) →	NBR	EPDM	NEOPRENE	VMQ	FKM
<b>Physical Properties:</b>					
Abrasion Resistance	Excellent	Very Good	Excellent	Poor	Good to Fair
Compression set	Good	Good	Good to Fair	Very Good	Very Good
Flame Resistance	Poor	Poor	Good	Fair	Very Good
High Temperature Limit	230°F	230°F	200°F	400°F	400°F
Low Temperature Limit	-20°F	-20°F	-10°F	-65°F	0°F
Resiliency	Good to Fair	Good	Very Good	Good	Fair
Tear Resistance	Excellent	Good to Fair	Good to Fair	Fair to Poor	Good
Tensile Strength	Very Good	Very Good	Very Good	Good to Fair	Good
Weather Resistance	Good to Fair	Excellent	Very Good	Excellent	Excellent
<b>Chemical &amp; Other Properties:</b>					
Acids	Good	Good	Good	Fair	Good
Alcohols	Good to Fair	Good to Fair	Very Good	Good	Excellent to Fair
Aliphatic Hydrocarbon Solvents	Excellent	Poor	Good	Fair to Poor	Excellent
Alkalis	Very Good	Very Good	Excellent	Poor	Good to Fair
Animal and Vegetable Oils	Very Good	Good	Good	Good	Very Good
Aromatic Hydrocarbon Solvents	Good to Fair	Poor	Fair to Poor	Fair to Poor	Excellent
Beer	Very Good	Very Good	Good	Good	Excellent
Juice, Most	Excellent	Excellent	Excellent	Excellent	Excellent
Milk	Excellent	Excellent	Excellent	Very Good	Excellent
Oil and Gasoline	Excellent to Good	Poor	Good to Fair	Fair to Poor	Excellent
Oxygenated Solvents	Poor	Very Good	Fair to Poor	Fair	Poor
Steam, Hot Water	Poor	Excellent	Fair	Good	Excellent
Whiskey	Good to Fair	Good	Fair to Poor	Very Good	Excellent
Wine	Very Good	Very Good	Fair	Very Good	Excellent

