



REFERENCE GUIDE FOR O-RING MATERIALS

<u><b>MATERIAL</b></u>	<u><b>USE WITH</b></u>	<u><b>DO NOT USE WITH</b></u>	<u><b>COMMENTS</b></u>
<p><b>NITRILE ( Buna-N )</b></p> <p>Duro: 70 Standard Temperature: -35° To 250°</p> <p>Least Expensive/ Very popular</p>	<p>Air, Water, Oils,  Fuels, Gasoline, Engine Coolant, LPG  Hydraulic Actuator  Seals, Hydraulic Pump Seals, Water Pump Seals Carburetor Seals, Transmission Seals</p>	<p>Acetone, Lube Oil, Auto/Aircraft, Brake Fluids, Automatic Transmissions. Military Hydraulic Systems</p>	<p>Good Wear Resistance</p> <p>Good Compression Set Resistance Good Short-Term Resilience</p> <p>Good Permeation Resistance</p>
<p><b>Hydrogenated Nitrile (HNBR)</b></p> <p>Duro: 70 Standard  Temperature: -40° To 325°</p>	<p>Engine Coolants, Oxygen/  Ozone, Steering Fluid Sour Crude, Refrigerants</p>	<p>Alcohol  Containing Fuels</p>	<p>Better high temperature and  Compression set resistance than Standard Nitrile. Resists chemicals, amines, hydrogen sulfide and ozone that typically attack standard Nitrile compounds.</p>
<p><b>Fluorocarbon (Viton &amp; Fluorel)</b></p> <p>Duro: 75 Standard  Temperature: -15° To 400°</p>	<p>Vacuum, Most Acids and  Chemicals , Silicone Oils Petroleum Oils, Di-Ester Lubricants. Halogenated Hydrocarbons,</p>	<p>Acetone, Skydrol,  Ketones, Amines, Ethyl Acetate, Hot Water &amp; Steam</p>	<p>Excellent high temperature capability.</p> <p>Can withstand brief intermittent Exposure to 600°. Low compression set. Good resistance to a wide variety of chemicals.</p>
<p><b>EPDM / EPR</b></p> <p>Duro: 70 Standard  Temperature: -60° To 250°</p>	<p>Water, Alcohol, Acetone, Steam, Brake Fluids, Some Acids and Base Ketones</p>	<p>Petroleum Oils &amp; Fuels, Toluene</p>	<p>Good heat resistance. Resistant to sunlight &amp; weathering. Poor resistance to Petroleum Oils &amp; fuels.</p>
<p><b>Silicone</b></p> <p>Duro: 70 Standard  Temperature: -65° To 400°</p>	<p>Dry Heat, Alcohol, Vegetable Oils, Oxygen, Sunlight, Ozone, Weathering Odorless &amp; Non-Toxic</p>	<p>Petroleum Oils &amp; Fuels, Acids, Silicone Oils, Brake Fluids</p>	<p>Broad temperature range. less favorable tensile, tear &amp; abrasion resistance.</p>



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<b>Neoprene ( Chloroprene)</b>  Duro: 70 Standard  Temperature: -65° To 300°	Alcohol, Engine Coolant, Vegetable Oil, Animal Fats, Ammonia Refrigerants	Petroleum Oils & Fuels, Dilute Acids, Toluene, Acetone.	Good resistance to flexing, tear, sunlight & Weathering.
<b>Aflas</b>  Duro: 70 Standard  Temperature: -40° To 450°	Engine Coolants, Steam, Corrosion Inhibitors, Carbon Dioxide	Petroleum Oils & Fuels	Good resistance to sour crude and Amine-based corrosion inhibitors.
<b>Fluorosilicone</b>  Duro: 70 Standard  Temperature: -80° To 350°	Petroleum Oils, Jet Fuel, Gasoline, Alcohol, Dry Heat.	Acetone, Ethyl Acetate, Some Acids, Amines	Slightly narrower temperature range than Silicone rubber, but with excellent resistance to a wider variety of fluids.
<b>Polyacrylate</b>  Duro: 70 Standard  Temperature: -20° To 350°	Automatic Transmission Fluid, Power Steering Fluid	Water, Toluene, Engine Coolant Acetone	Automatic transmission seals. meets many automotive specifications.
<b>Butyl</b>  Duro: 70 Standard  Temperature: -65° To 200°	Water, Alcohol, Skydrol, Pydruol, Ammonia, Acetone, Hydrazine	Petroleum Oils & Fuels, Toluene, Trichloroethane	Low gas Permeability. Good resistance to sunlight & weathering.
<b>Hypalon</b>  Duro: 70 Standard  Temperature: -65° To 200°	Animal Fats, Vegetable Oils, Engine Coolant, Freon 12, Freon 22, Refrigeration Oils	Petroleum Fuels Acetone Toluene, Ethyl Acetate, Trichloroethane	Exceptionally resistant to sunlight, ozone and weathering. For most applications neoprene does an equal job at a lower cost.



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<p><b>Polyurethane</b></p> <p>Duro: 70 &amp; 90 Standard</p> <p>Temperature: -65° To 200°</p>	<p>Drive Belts</p> <p>Some Petroleum Oils</p> <p>Oxygen/Ozone</p> <p>Chlorinated Solvents</p>	<p>Ketones</p> <p>Acids</p> <p>Water</p>	<p>Excellent abrasion and extrusion resistance.</p> <p>poor compression set and chemical resistance.</p>
<p><b>Teflon® (PTFE)</b></p> <p>Polytetrafluoroethylene</p> <p>Temperature: -65° To 200°</p>	<p>Chemical Resistance</p> <p>Low Coefficient of Friction.</p>	<p>Molten Alkaline</p> <p>Metals.</p>	<p>Teflon® is impervious to virtually all fluids and gases.</p>
<p><b>Teflon® Encapsulated</b></p> <p>( Viton®, Silicone or Spring loaded core)</p>	<p>Temperature and Chemical resistance</p> <p>Depends on core.</p>		<p>Cryogenics, Chemicals</p>
<p><b>Kalrez® &amp; Simriz®</b></p> <p><b>Parofluor</b></p> <p>( Perfluorelastmer)</p> <p>Temperature: -10° To 615°</p>	<p>Petroleum Oils,</p> <p>Chlorinated Hydrocarbons,</p> <p>Low Out Gassing,</p> <p>High Temperature,</p> <p>Excellent Chemical Resistance</p>	<p>Molten Metals</p> <p>Halogenated Freons &amp; Fluids</p> <p>Gaseous Alkali Metals</p>	<p>High Chemical &amp; Temperature resistance.</p> <p>Excellent outgasing performance in Vacuums</p> <p>Low compression set.</p>