Corporate Address
21850 88th Place South
Kent, WA 98031
Email: info@nwflowtech.com

Northwest FLOW TECHNOLOGIES
A Division of Northwest Industrial Repair, Inc.

Locations
Western Washington: (253) 740-0530
Eastern Washington: (509) 949-3368
Idaho & Montana: (208) 360-3833
Oregon: (503) 708-9609

General Properties of Sealing Materials

Material	Abbrev.	Trade Name	Std. Temp Range	Price	Advantages	Disadvantages
Natural Rubber	NR		-58°F to 158°F	$	High tensile strength. Good resilience and abrasion properties. Excellent lower compression set.	Poor ozone, steam and weathering resistance. Poor resistance to oils and non-polar solvents.
Acrylonitrile-Butadiene Rubber (Nitrile Rubber), Buna-N	NBR	Europrene® Krynac® Nipol N® Perbunan NT® Breon®	-40°F to 257°F	$	Excellent abrasion resistance. Good tear resistance. Good resistance to oil, water and non-polar solvents.	Poor ozone, steam and weathering resistance. Poor flame resistance. Poor vs benzene, methylene chloride, trichloroethylene, many ketones.
Hydrogenated Acrylonitrile-Butadiene Rubber	HNBR	Therban® Zetpol®	-30°F to 300°F	$$$$	Good resistance to oils and non-polar solvents. High tensile strength. Good ozone and weathering resistance. Good abrasion resistance. Excellent heat resistance.	Decreased low temperature flexibility compared to NBR. Poor steam resistance. Should not be exposed to solvents.
Polyacrylate Rubber	ACM	Noxtite® Hytemp® Nipol AR®	-25°F to 300°F	$$$	Excellent resistance to petroleum fuel and oil. Good heat and ozone resistance. Resists flex cracking.	Moderate water resistance.
Polyester Urethane /Polyether Urethane	AU/EU	Zurcon® Adiprene® Desmopan® Vulcollan® Pellethan®	-30°F to 175°F	$$$	Excellent tensile strength and anti-abrasion properties. Excellent ozone resistance. Good resistance to oils.	Poor resistance to some non-polar solvents. Poor steam resistance. Softening occurs at higher temperatures.
Chloroprene Rubber (Neoprene)	CR	Baypren® Neoprene®	-40°F to 250°F	$$	High tensile strength and resilience. Excellent ozone and weathering resistance. Good resistance to oils.	Poor resistance to some non-polar solvents. Poor steam resistance.
Ethylene Propylene Diene Rubber	EPDM	Dutral® Keltan® Vistalon® Buna EP®	-40°F to 275°F	$$	Excellent steam resistance. Good ozone and weathering resistance. Good low temperature flexibility.	Poor resistance to oils and non-polar solvents.
Silicone Rubber	VMQ	Silastic® Elastoseal® Silopren® Rhodorsil®	-85°F to 400°F	$$$	Excellent resistance to high and low temperatures.	Poor tensile strength. Poor resistance to oils and non-polar solvents.
Fluorosilicone Rubber	FMVQ	Silastic®	-75°F to 400°F	$$$$	Excellent resistance to high and low temperatures. Excellent ozone resistance. Excellent compression set resistance. Good resistance to oils and most non-polar solvents.	Poor tensile strength and abrasion resistance. Should not be exposed to brake fluids and hydrazine.
Fluorocarbon Rubber (Viton)	FKM	Viton® Tecnoflon® Fluorel® Dai-El®	-13°F to 446°F	$$$	Excellent chemical resistance, gas and liquid permeation resistance. Excellent weather and ozone resistance. Inherently more resistant to burning than non-fluorinated hydrocarbons. Good mechanical properties improving sealing performance with good compression set.	Limited steam resistance. Swells significantly in fluorinated solvents. Should not be used with molten or gaseous alkali metals. Not as chemical resistance as FFKM but better than most other elastomers.

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Perfluoro Rubber	FFKM	Simriz® Kalrez® Isolast® Chemraz® Parofluor®	-13°F to 600°F	$$$$$	Outstanding high temperature and chemical resistance. Excellent ozone, steam and weather resistance. Excellent chemical resistance, gas and liquid permeation resistance.	Poor low temperature performance. Swells significantly in fluorinated solvents, should not be used with molten or gaseous alkali metals, thermal coefficient larger than other elastomers.
Polytetrafluorethylene (Teflon)	PTFE	Teflon® Fluon® Dyneon® Polyflon® Algoflon®	-300°F to 450°F	$$$$$	Non-flammable. Outstanding chemical and solvent resistance. Excellent weatherability. Low friction coefficient. Wide thermal service range. Very good electrical properties.	Non processable by common thermoplastic methods. Toxic in thermal degradation. Subject to creep. Permeable. Requires high processing temperatures. Low strength. High density.