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Properties Comparison of O-Ring Elastomers

A=Excellent B=Very Good C= Not Good D=Fair F=Bad

	Natural Rubber	Styrene Butadiene Copolymer	Butyl Rubber	Ethylene Propylene Rubber	Poly Chloroprene	Nitrile Rubber	Urethane Rubber	Chlorosulfonated Polyethylene (Hypalon)	Polyacrylate (PA)	Epichlorchydrin	Ethylene Acrylic (VAMAC)	Silicone Rubber	Fluorocarbon (VITON)
ASTM D1418 Designation	NR	SBR	IIR	EPDM	CR	NBR	AU, EU	CSM	ACM	ECO	E/A	VMQ	FKM
ASTM D2000 SAE J200 Type Class	AA	AA BA	AA BA	AA BA,CA	BC BE	BF,BG BK,CH	BG	CE	DF DH	CH	EE	FC,FE, GE	HK
Specific Gravity	0.92	0.94	0.92	8.86	1.23	1	1.02-1.25	1-1.2	1.09	1.27-1.36	1.04	0.98	1.85
Tensile Strength	A	B	C	C	B	B	A	B	F	C	C	F	B
Elongation	A	B	B	B	B	B	A	B	F	F	B	A	F
Hardness, Low	30	40	30	30	30	30	70	40	40	40	50	30	85
Hardness, High	90	90	70	90	90	90	90	80	80	70	80	85	90
Resilience	A	C	F	B	A	B	A	C	C	C	B	C	C
Tearing	A	C	C	C	B	B	A	C	F	C	B	F	C
Abrasion	A	A	A	B	B	A	A	B	C	C	B	F	C
Impact	A	A	B	B	A	B	A	B	F	B	C	F	C
Gas Permeability	C	C	A	C	B	B	B	B	C	A	C	F	B
Oxidation	C	C	A	B	B	C	B	A	B	B	A	A	A
Ozone	F	F	B	A	B	F	B	A	B	A	A	A	A
Weather	C	C	A	A	B	C	B	B	B	B	A	A	A
Sunlight	F	C	A	A	B	D	B	A	B	B	A	A	A
Heat	F	C	B	A	B	C	C	B	B	B	B	A	A

Flame	F	F	F	F	B	F	C	B	D	B	F	B	B
Flex Crack	C	C	B	A	B	C	B	B	C	B	B	B	B
Low Temp	B	C	C	B	C	C	B	C	F	B	C	A	B
Petroleum Oil, Fuel, Gasoline	F	F	F	F	D	B	B	D	B	B	B	C	A
Animal, Vegetable Oil	C	C	B	B	B	A	B	B	A	A	B	D	A
Alcohols	B	B	B	D	A	B	D	A	B	B	C	B	A
Alkalis	C	C	A	B	A	B	F	A	F	D	B	F	D
Acids	D	D	B	B	B	B	F	B	C	C	C	C	B
Allphatic Hydrocarbons	F	F	F	F	B	A	B	B	A	B	B	F	A
Aromatic Hydrocarbons	F	F	F	F	C	D	F	C	C	B	F	F	A
Water	A	B	A	A	B	B	C	B	F	B	A	B	B