



# Rubber Physical Properties



## Comparative Properties Thermoplastic and Thermoset Polymers

Common Name	Chemical Name	ASTM Abbreviations	Commercial Names									
Natural Rubber	Polyisoprene(Natural)	NR										
Isoprene Rubber	Polyisoprene (Synthetic)	IR	JSR IR, NIPOL IR									
EPDM	Ethylene propylene diene monomer	EPDM	BUNA, KELTAN, NORDEL, VISTALON, JSR EP DUTRAL, POLYSAR, ROYALENE									
Chloroprene	Polychloroprene	CR	BAYPREN, NEOPRENE									
SBR	Styrene Butadiene rubber	SBR	AUSTRAPOL, ASRC, JSR, NIPOL									
Silicone	Polymethylsiloxane	VMQ										
Liquid silicone	Polymethylsiloxane	VMQ										
Butyl	Isobutylene Isoprene	IIR										
Nitrile	Acrylonitrile Butadiene	NBR	PREBUNAN, HYCAR, NIPOL, KRYNAC,									
Butadiene	Polybutadiene	BR	AUSTRAPOL, ASRC, SOLPRENE,									
Hypalon	Chlorosulphonated Polyethylene	CSM	Hypalon									
Acrylic	Polyacrylic	ASM										
Thermoplastic Elastomers		TPR, TPU	Santoprene, Sarlink, Desmopan									
Fluorocarbon	Fluorocarbon	FKM	Fluorel, Viton									
			NR/IR	SBR	IIR	NBR	CR	CSM	EP	FKM	VMQ	TPR/TPU
Tear Resistance	E	G	VG-G	F	VG-G	F	VG-G	F	VG-G	F	F-P	G
Abrasion Resistance	E	VG	VG	G	E	VG	G	G	G	F-P	G	G
Ozone Resistance	F	F-P	G-F	F-P	VG	VG-E	E	VG-E	E	VG-E	VG-E	G
Sunlight Ageing	F	F	VG	F-G	VG-E	VG-E	E	E	E	E	E	G
Oxidation Resistance	VG-G	VG-G	E	VG-G	E	VG-E	E	E	E	E	E	G
Heat Resistance	VG-G	VG-G	VG	VG-E	VG	VG	VG-E	E	E	E	F	F
Compression Set Ratio	G	G	F	G	G-F	F	VG	VG	VG	VG	VG	F
Solvent Resistance (Aliphatic)	P	P	P	E	G	F-G	P	E	F-P	P	F-P	P
Solvent Resistance (Aromatics)	P	P	F-P	VG-G	F	F	F-P	E	P	P	P	P
Oxygenated Solvents, Alcohols	G	G	G-F	P	P	P	G	F-P	P-F	F	F	F
Oil and Gasoline Resistance	P	P	P	E	G	F-G	P	E	VG	P	P	P
Vegetable Oil Resistance	P-G	P-G	VG-E	E	G	F-G	F-G	E	VG-G	G	G	G
Animal Oil Resistance	P-G	P-G	VG-E	E	G	F-G	F-G	E	VG-G	G	G	G
Acid Resistance (Dilute)	E	G	E	G	VG	E	E	E	G	G	G	G
Acid Resistance (Concentrated)	F-G	G	E	G	VG-G	VG	G	E	F	F	F	F
Flame Resistance	P	P	P	P	G	F-G	F-P	G	F	G-P	G-P	G-P
Impermeability to Gases	G	F	G	G	G	VG	G	G	P	P	P	P
Electrical Insulation	VG-E	VG-G	VG	P	G	VG-E	E	E	VG	VG	VG	VG
Water Swell Resistance	VG	VG	VG-E	VG-G	G	G	E	VG-E	VG-G	G	G	G
Low Temperature Flexibility	VG-E	VG-G	VG-G	F-G	F-G	G	E	VG-G	E	G	G	G
Temp. Range (°C) : - Lowest - Highest	-55 90	-55 90	-50 120	-30 100	-40 100	130	-20 150	-20 200	-60 200	-40 80	-40 80	-40 80

KEY: E - Excellent VG - Very Good G - Good F - Fair P - Poor



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