Mechanical Properties Table of Rubber Materials and Uses

Type of Rubber (ASTM Abbreviation)		Natural Rubber (NR)	Styrene Butadiene Rubber(SBR)	Butadiene Rubber'(BR)	Chloroprene Rubber (CR)	Nitrile-Butadiene Rubber (NBR)	Isobutyle-ne Isoprene Rubber (IIR)	Ethylen-e Propyle-ne Rubber (EPDM)	Chlorosulphona-ted Polyethylene (CSM)	Acrylic Rubber (ACM/ ANM)	Fluoro Rubber (FPM)	Silicone Rubber (Q)
Main Features		Of all rubbers, it feeds so good; Excellent mechanical properties.	It exhibits higher wear resistance and aging resistance than NR and is cheaper.	It has greater elasticity than NR and has excellent abrasion resistance.	It has excellent weather resistance, ozone resistance, heat resistance, chemical resistance, and aging resistance on average.	It exhibits good oil resistance, abrasion resistance, and aging resistance.	It exhibits good weather resistance, ozone resistance, and gas permeability resistance.	It exhibits good aging resistance, ozone resistance, electrical properties, and resistance to polar liquids.	It exhibits good aging resistance, ozone resistance, chemical resistance, and abrasion resistance.	It exhibits good oil resistance and abrasion resistance at high temp.	It exhibits superb heat-resistance and chemical resistance.	It exhibits high heat and cold resistance, non-toxicity, releasability, weather resistance, and electrical properties.
Specific Gravity of Pure Rubber		0.92	0.93~0.94	0.91~0.92	1.15~1.25	1.00~1.20	0.91~0.93	0.86~0.87	1.11~1.18	1.09~1.10	1.80~1.82	0.95~0.98
Physical Properties and Resistance of Rubber Compounds	Hardness(Shore A)	30~90	40~90	40~90	40~90	40~90	35~90	40~90	50~90	40~90	60~90	25~80
	Tensile strength(kg/cm2)	70~280	50~230	50~230	60~250	50~250	50~150	50~200	70~200	60~140	70~150	30~110
	Elongation(%)	100~600	100~500	100~500	100~500	100~500	100~600	100~500	100~500	190~400	100~300	100~500
	Elastic rebound(%)	A	B	A	A	A	C	B	B	C	C	A
	Max. service temp(℃)	60	90	90	100	100	120	140	130	160	200	250
	Min. service temp.	-40	-35	-45	-30	-25	-40	-40	-25	-10	-25	-95
	Wear resistance	B	A	A	B	A	C	C	A	C	B	C
	Flexibility & cracking resistance	A	B	C	B	B	A	B	B	B	B	B
	Ozone resistance	D	D	D	B	D	A	A	A	A	A	A
	Compression set resistance	B	B	B	B	B	C	B	C	C	B	B
	Gas permeability resistance	C	C	C	B	B	A	C	B	C	B	D
	Salt tolerance	D	D	D	B	D	D	D	B	D	A	C
	Max. electrical insulation(□•cm)	10^{10}~10^{15}	10^{10}~10^{16}	10^{14}~10^{15}	10^{10}~10^{12}	10^{2}~10^{11}	10^{16}~10^{18}	10^{12}~10^{15}	10^{14}	10^{8}~10^{10}	10^{15}~10^{18}	10^{11}~10^{15}
Oil Resistance And Solvent Resistance of Rubber Compounds	Lubricant	D	D	D	B	A	D	D	B	A	A	B
	Gasoline	D	D	D	C	B	D	D	C	C	A	D
	Aliphatic hydrocarbon	D	D	D	B	A	D	D	B	B	A	D
	Aromatic hydrocarbon	D	D	D	D	D	D	D	D	D	B	D
	Chlorinated solvent	D	D	D	D	D	D	D	D	D	A	D
	Alcohol	A	A	A	A	A	A	A	A	D	B	C

	Keton	B	B	B	C	D	B	A	C	D	D	C
Acid Resistance and Alkali Resistance of Rubber Compounds	Water	A	A	A	A	A	A	A	A	C	A	A
	Dilute acid	B	B	B	A	B	A	A	A	C	A	B
	Concentrated acid	D	D	D	C	D	B	B	B	D	A	D
	Alkali	B	B	B	A	B	A	A	A	D	C	B
Main Use		Automobile tires, commercial truck tires, shoes, hoses, belts, air springs, general and industrial products	Industrial and general rubber products such as automobile tires, automobile parts, shoes, rubber, tarpaulin, sports goods, belts	Industrial products such as automobile and aircraft tires, shoes, anti-vibration rubber, rubber belts and hoses	Cable sheath, conveyor belt, anti-vibration rubber, window frame rubber, adhesive, rubber waterproof sheet and general industrial products	Oil-resistant products such as oil seal gasket, oil-resistant hose, conveyor belt, printing roller, top roll for yarn spinning	Tube curing bag for automobile tires, roofing, cable sheath, window frame rubber, steam hose, conveyor belt, etc.	Cable sheath, automotive weather strip, steam hose, conveyor belt, etc.	Weather resistance, corrosion resistant paint, tank lining, rubber waterproof sheet, corrosion resistant packing, heat resistance, corrosion resistance rate, etc.	Automobile transmission, crankshaft packing and seal, etc.	Packing of missiles and rockets that require heat and oil-resistant chemicals, corrosion-resistant packing of chemical plants, and diaphragms, etc.	Packing, gasket, oil seal, heat-resistant and cold-resistant sealant, medical electrical insulation products