



**MOLDED  
DIMENSIONS  
GROUP**

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# PHYSICAL PROPERTIES OF **RUBBER**

BOOTS

BUSHINGS

DIAPHRAGMS

GASKETS

GROMMETS

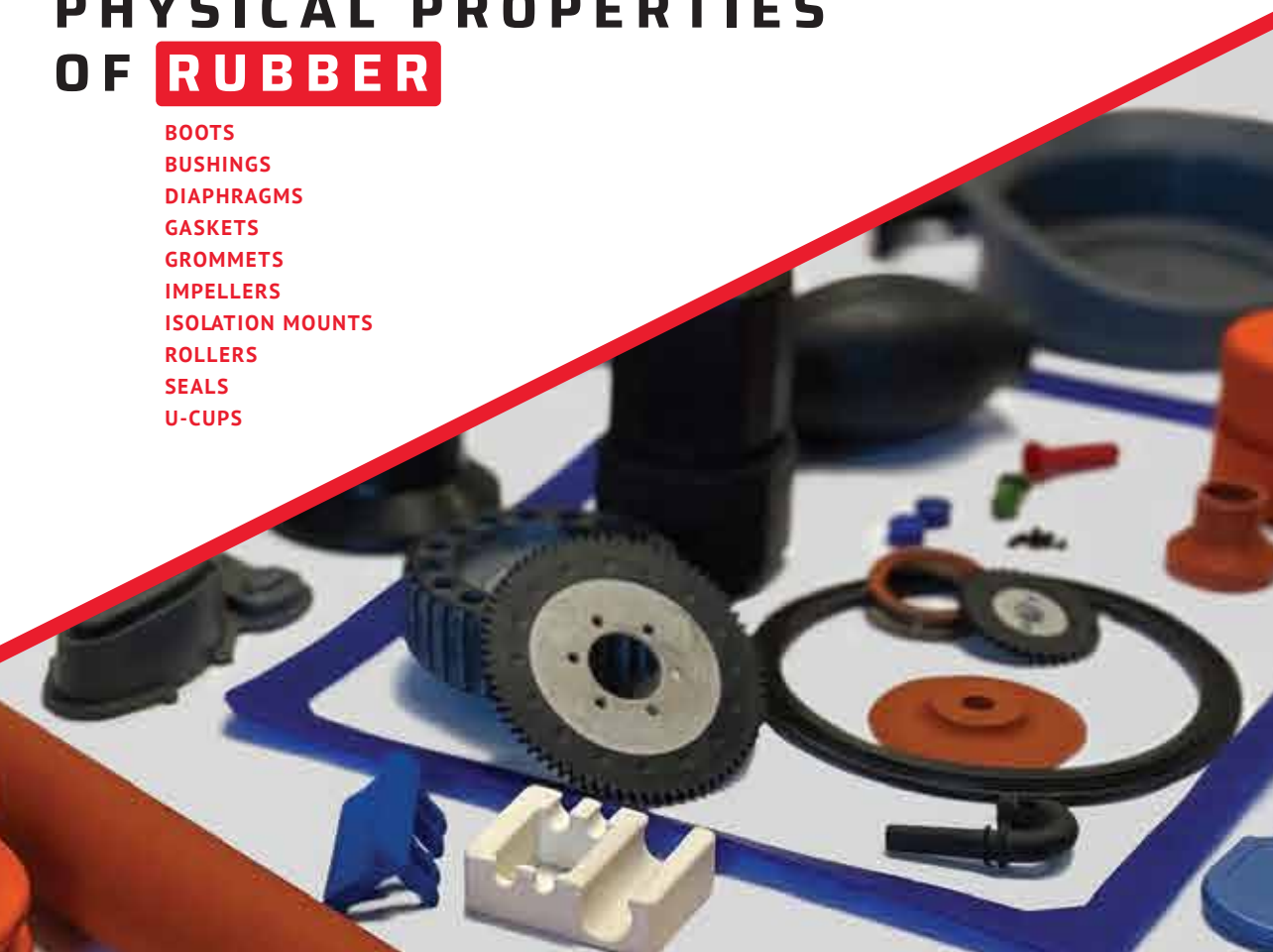
IMPELLERS

ISOLATION MOUNTS

ROLLERS

SEALS

U-CUPS



# COMPARATIVE PHYSICAL PROPERTIES OF RUBBER

Each of these different polymers may be compounded to produce specific physical properties that are engineered to meet your service requirements. Contact our sales department to discuss your product or application. We will be happy to assist you in choosing the most suitable compound to meet your requirements.

TYPE	NATURAL RUBBER	STYRENE BUTADIENE	NITRILE	NEOPRENE	SILICONE	FLUORO-CARBON	HYDRIN	EPDM	PENTA-THANE
ASTM Designation	NR	SBR	NBR	CR	VMQ	FKM	CO, ECO	EPM, EPDM	AU, EU
<b>PHYSICAL PROPERTIES</b>									
Specific Gravity	0.92-0.93	0.94	0.98	1.23-1.25	1.1-1.6	1.4-1.95	1.27-1.49	0.86	1.02-1.20
Thermal Conductivity Btu/ft/hr/sq ft/F	0.082	0.143	0.143	0.11	0.13	0.06-1.3	--	0.15	0.09-0.10
Coef of Thermal Exp (cubical), 10 <sup>-5</sup> per F Gum	37	37	39	34	45	--	--	32	--
<b>MECHANICAL PROPERTIES</b>									
Hardness, Durometer	30A-90A	30A-90A	30A-95A	30A-95A	20A-90A	55A-95A	50A-95A	30A-90A	10A-80D
Tensile Strength (1000 psi)	3.5-4.5	2.5-3.0	1.0-3.5	0.5-3.5	1.5	2.0	2-3	0.5-3.5	.08-8.0
Modulus (100%), psi	150-3000	300-1500	100-1500	100-3000	--	200-2000	150-2000	100-3000	25-5000
Elongation, %	500-700	450-500	400-600	100-800	100-800	150-450	320-350	100-700	250-800
Compression Set, Method B, %	10-30	5-30	5-20	20-60	10	20-25	20	20-60	0.7-45
Resilience (ASTM 945) %	80	20-90	--	50-80	30-60	40-70	50-80	40-75	5-75
Rebound (Bashore)	--	10-60	--	50-80	--	40-70	50-80	40-75	20-65
Hysteresis Resistance	Excellent	Fair-Good	--	Very Good	Fair-Good	Good	Good	Good	Fair-Good
Flex Cracking Resistance	Excellent	Good	Fair-Good	Very Good	Fair-Excellent	Good	Very Good	Fair-Good	Outstanding
Tear Resistance	Excellent	Fair	Good	Good	Fair	Fair-Very Good	Very Good	Fair-Good	Outstanding
Abrasion Resistance	Excellent	Excellent	Excellent	Excellent	Poor	Good	Fair-Good	Good-Excellent	Outstanding
Impact Resistance	Excellent	Excellent	Good	Excellent	Poor-Good	Good	Good	Very Good	Excellent- Outstanding
<b>ELECTRICAL PROPERTIES</b>									
Volume Resistivity, ohm-cm	--	5.0-8.4 x 10 <sup>8</sup>	3.5 x 10 <sup>10</sup>	2.0 x 10 <sup>13</sup>	1 x 10 <sup>14</sup> - 1 x 10 <sup>16</sup>	2 x 10 <sup>13</sup>	--	2 x 10 <sup>16</sup> - 1 x 10 <sup>17</sup>	0.3 x 10 <sup>10</sup> - 4.7 x 10 <sup>13</sup>
Dielectric Strength, v/mil	400-600	600-800	250	400-600	400-700	500	--	500-1000	330-700
<b>THERMAL PROPERTIES</b>									
Service Temperature, °F Min for Continuous Use	-70	-65	-40	-60	-160	-20	-50	-70	-65
Service Temperature, °F Max for Continuous Use	150	150	250	225	450	500	275	300	200
Heat Aging at 212°F	B-C	B-C	A	A	A	A	A	A	B
<b>ENVIRONMENTAL RESISTANCE</b>									
Ozone	Poor	Poor	Poor	Very Good	Excellent	Outstanding	Excellent	Outstanding	Excellent
Oxidation	Good	Good	Fair-Good	Very Good	Excellent	Outstanding	Excellent	Excellent	Excellent
Weathering	Fair	Fair	Good	Very Good	Excellent	Excellent	Excellent	Outstanding	Good
Water	Excellent	Excellent	Excellent	Good	Excellent	Good	Good	Excellent	Good-Excellent
Radiation	Fair-Good	Good	Fair-Good	Good	Fair-Good	Fair-Good	Poor	Good	Good-Excellent