



PHYSICAL PROPERTIES AND RELATIVE PERFORMANCE FOR THE 15 TYPES OF ELASTOMERS

Base Polymer		1 Natural Polyisoprene	2 Synthetic Polyisoprene	3 Styrene - Butadiene	4 Isobutylene Isoprene	5 Polybutadiene	6 Ethylene - Propylene	
ASTM Designation (D1418)		NR	IR	SBR	11R	BR	EPDM, EPM	
WEIGHT OF BASE ELASTOMER	LB/CU IN.	0.033	0.033	0.034	0.033	0.034	0.031	
	SPEC. GR.	0.93	0.93	0.94	0.92	0.94	0.86	
PHYSICAL PROPERTIES FOR ELASTOMER COMPOUNDS	DUROMETER, RANGE	30-100	40-80	40-100	30-100	45-80	30-90	
	RESILIENCE	OUTSTANDING	OUTSTANDING	GOOD	FAIR	OUTSTANDING	GOOD	
	TENSILE STRENGTH, PSI (REINFORCED)	4000+	2000-3000	2000+	2000+	2500	2000-3000	
	ELONGATION, % (REINFORCED)	500	300-700	450	300-800	450	500	
	DRIFT, ROOM TEMP	EXCELLENT	GOOD	EXCELLENT	FAIR	GOOD	FAIR	
	COMPRESSION SET	GOOD	FAIR	GOOD	FAIR	FAIR	FAIR	
	ELECTRICAL RESISTIVITY	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	
	IMPERMEABILITY, GAS	GOOD	GOOD	FAIR	OUTSTANDING	GOOD	GOOD	
	MECHANICAL	RESISTANCE TO	IMPACT	EXCELLENT	EXCELLENT	EXCELLENT	GOOD	GOOD
			ABRASION	EXCELLENT	EXCELLENT	EXCELLENT	GOOD	EXCELLENT
TEAR			EXCELLENT	GOOD	FAIR	GOOD	GOOD	POOR
CUT GROWTH		EXCELLENT	EXCELLENT	GOOD	EXCELLENT	FAIR	GOOD	
TENSILE STRENGTH PSI, AT		250 F	1800	1800	1200	1000	1200	2000
		400 F	125	125	170	350	170	400
ELONGATION, %, AT		250 F	500	500	250	250	250	300-500
		400 F	80	80	60	80	60	0-120
DRIFT AT 121 F		GOOD	GOOD	GOOD	FAIR	GOOD	FAIR	
HEAT AGING AT 212 F		GOOD	FAIR	GOOD	EXCELLENT	FAIR	EXCELLENT	
FLAME RESISTANCE	POOR	POOR	POOR	POOR	POOR	POOR		
LOW TEMPERATURE	STIFFENING F	-20 TO -50	-20 TO -50	0 TO -50	-10 TO -40	-30 TO -60	-20 TO -50	
	BRITTLE POINT F	-80	-80	-80	-80	-100	-90	
WEATHER	FAIR	FAIR	FAIR	EXCELLENT	FAIR	EXCELLENT		
OXIDATION	GOOD	EXCELLENT	GOOD	EXCELLENT	EXCELLENT	GOOD		
OZONE	POOR	POOR	POOR	EXCELLENT	POOR	EXCELLENT		
RADIATION	FAIR-GOOD	FAIR-GOOD	GOOD	POOR	POOR	POOR		
WATER	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	GOOD-EXCELLENT		
ACID	FAIR-GOOD	FAIR-GOOD	FAIR-GOOD	EXCELLENT	FAIR-GOOD	GOOD-EXCELLENT		
ALKALI	FAIR-GOOD	FAIR-GOOD	FAIR-GOOD	EXCELLENT	FAIR-GOOD	GOOD-EXCELLENT		
GASOLINE, KEROSENE, ETC. (ALIPHATIC HYDROCARBONS)	POOR	POOR	POOR	POOR	POOR	POOR		
BENZOL, TOLUOL, ETC (AROMATIC HYDROCARBONS)	POOR	POOR	POOR	FAIR-GOOD	POOR	FAIR		
DEGREASER SOLVENTS (HALOGENATED HYDROCARBONS)	POOR	POOR	POOR	POOR	POOR	POOR		
ALCOHOL	GOOD	GOOD	FAIR	EXCELLENT	FAIR-GOOD	POOR		
SYNTHETIC LUBRICANTS (DIESTER)		POOR-FAIR	POOR-FAIR	POOR	FAIR	POOR-FAIR	POOR-FAIR	
	SILCATES	POOR	POOR	FAIR-POOR	FAIR	POOR	FAIR-POOR	
HYDRAULIC FLUIDS	PHOSPHATES	POOR-FAIR	POOR-FAIR	POOR	GOOD	POOR-FAIR	GOOD-EXCELLENT	
SUBJECTIVE PROPERTIES	TASTE	FAIR-GOOD	FAIR-GOOD	FAIR-GOOD	FAIR-GOOD	FAIR-GOOD	GOOD	
	ODOR	FAIR-GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	
	NONSTAINING	POOR-GOOD	EXCELLENT	POOR-GOOD	GOOD	GOOD	GOOD	
BONDING TO RIGID MATERIALS		EXCELLENT	EXCELLENT	EXCELLENT	FAIR-EXCELLENT	EXCELLENT	POOR	

7 Neoprene	8 Nitrile (High)	9 Polysulfide	10 Polyester/Polyeter Urethane	11 Silicone	12 Chlorosulfonated Polyethy lene	13 Polyacrylate	14 Fluorinated Hydrocarbon	15 Epichlorohydrine
CR	NBR	PTR	AU, EU	PSI, PVSJ, SI, VSI	CSM	ACM, ANM	FPM	NA
0,044	0,036	0,048	0,039	0,036	0,040	0,040	0,05-0,07	3,8
1,23	1,00	1,34	1,05	0,95	1,10	1,10	1,4 TO 1,95	1,27 TO 1,36
40-95	20-90	20-80	55-100	25-90	50-95	40-90	65-90	40-80
XCELLENT	GOOD	FAIR	OOD-EXCELLENT	POOR- EXCELLENT	GOOD	GOOD	FAIR	GOOD
3000+	1000-3500	500-1500	4000-8000	600-1500	1500-2500	1700	1500-3000	2500
650-850	400-600	200-550	250-800	90-900	250-500	450	100-450	100-500
FAIR-GOOD	GOOD	POOR	OOD-EXCELLENT	FAIR- EXCELLENT	FAIR	FAIR	GOOD	EXCELLENT
FAIR-GOOD	GOOD	POOR-FAIR	EXCELLENT	GOOD- EXCELLENT	FAIR-GOOD	FAIR-GOOD	GOOD- EXCELLENT	EXCELLENT
FAIR	POOR	FAIR	GOOD	EXCELLENT	GOOD	FAIR	GOOD	POOR
GOOD	GOOD	EXCELLENT	GOOD	FAIR	EXCELLENT	GOOD	EXCELLENT	EXCELLENT
GOOD	FAIR	POOR	EXCELLENT	POOR-GOOD	FAIR-GOOD	POOR	POOR-GOOD	EXCELLENT
GOOD- EXCELLENT	EXCELLENT	POOR-FAIR	EXCELLENT	POOR- EXCELLENT	GOOD	FAIR-GOOD	GOOD	GOOD
GOOD	GOOD	POOR-FAIR	EXCELLENT	POOR-GOOD	FAIR-GOOD	FAIR	POOR-GOOD	EXCELLENT
GOOD	GOOD	POOR	FAIR-EXCELLENT	POOR-GOOD	FAIR-GOOD	GOOD	POOR-GOOD	EXCELLENT
1500	700	700	1800	550	500	1300	300-800	GOOD
180	130	UNDER 25	200	450	200	225	150-300	NOT SUITABLE
350	120	140	300	200	60	400	100-350	GOOD
0-100	20	UNDER 25	140	100	20	150	50-180	NOT SUITABLE
FAIR-GOOD	EXCELLENT	POOR	EXCELLENT	EXCELLENT	FAIR	FAIR	GOOD- EXCELLENT	EXCELLENT
GOOD	GOOD	GOOD	FAIR-GOOD	EXCELLENT	EXCELLENT	EXCELLENT	OUTSTANDING	EXCELLENT
GOOD	POOR-FAIR	POOR	POOR-FAIR	FAIR-GOOD	GOOD	POOR-FAIR	EXCELLENT	GOOD
+10 TO -20	+30 TO -20	-10 TO -45	-10 TO -30	-65 TO -180	-30 TO -50	+35 TO +10	+20 TO -30	-65
-45	-65	-60	-60	-90 TO -180	-60	-10	+10 TO -60	-70
XCELLENT	GOOD	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT
GOOD	FAIR-GOOD	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	OUTSTANDING	EXCELLENT
XCELLENT	POOR	EXCELLENT	EXCELLENT	EXCELLENT	OUTSTANDING	EXCELLENT	OUTSTANDING	EXCELLENT
FAIR-GOOD	FAIR-GOOD	FAIR-GOOD	GOOD	FAIR- EXCELLENT	FAIR-GOOD	POOR-GOOD	FAIR-GOOD	POOR
GOOD	EXCELLENT	GOOD	GOOD	EXCELLENT	GOOD	FAIR	GOOD	GOOD
GOOD	GOOD	FAIR	POOR-FAIR	POOR-GOOD	EXCELLENT	FAIR	GOOD- EXCELLENT	GOOD
GOOD	FAIR-GOOD	GOOD	POOR-FAIR	POOR-FAIR	EXCELLENT	POOR	POOR-GOOD	GOOD
GOOD	EXCELLENT	EXCELLENT	EXCELLENT	POOR-FAIR	FAIR	EXCELLENT	EXCELLENT	OUTSTANDING
POOR	GOOD	EXCELLENT	POOR-FAIR	POOR-FAIR	POOR-FAIR	POOR	EXCELLENT	EXCELLENT
POOR	POOR	FAIR-GOOD	FAIR-GOOD	POOR-GOOD	POOR-FAIR	POOR	GOOD	EXCELLENT
FAIR	EXCELLENT	GOOD	GOOD	GOOD	GOOD	POOR	EXCELLENT	FAIR
POOR	FAIR-GOOD	GOOD	POOR	POOR-FAIR	POOR	GOOD	FAIR-GOOD	POOR
GOOD	FAIR	POOR-FAIR	-	POOR	GOOD	GOOD	GOOD	NA
POOR	POOR	POOR-FAIR	POOR	GOOD	POOR-FAIR	POOR	POOR	NA
FAIR-GOOD	FAIR-GOOD	POOR-FAIR	GOOD	GOOD- EXCELLENT	FAIR-GOOD	FAIR-GOOD	FAIR-GOOD	OUTSTANDING
FAIR-GOOD	GOOD	POOR	GOOD	GOOD- EXCELLENT	GOOD	FAIR-GOOD	GOOD	OUTSTANDING
GOOD- XCELLENT	POOR- GOOD	POOR-FAIR	GOOD	OUTSTANDING	EXCELLENT	GOOD	POOR-GOOD	OUTSTANDING
GOOD- XCELLENT	GOOD- EXCELLENT	FAIR-GOOD	FAIR-GOOD	FAIR- EXCELLENT	FAIR-GOOD	GOOD	POOR-GOOD	EXCELLENT

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