



Mechanical Rubber

GENERAL GUIDE TO THE PROPERTIES OF RUBBER ELASTOMERS

COMMON NAME	Gum/Natural	Urethane	Neoprene	Nitrile/Buna N	Chlorobutyl	Hypalon®	EPDM/EPT	Viton®/Fluorel®	Silicone	GRS/Buna S
ANSI/ASTM D1418-77	NR/IR	AU/EU	CR	NBR	CIIR	CSM	EPDM	FKM	SI	SBR
ASTM D2000; SAE J200 MILITARY; MIL STD 417	AA RN	BG SB	BC-BE SC	BF-BG-BK-CH SB	AA-BA RS	CE SC	BA-CA-DA RS	HK -	FC-FE-GE TA	AA-BA RS
CHEMICAL NAME	Polyisoprene	Polyester/ Polyether	Poly- chloroprene	Butadiene Acrylonitrile	Chloro- isobutylene Isoprene	Chloro- sulfonated Polyethylene	Ethylene Propylene	Fluorinated Hydrocarbon	Polysiloxane	Styrene Butadiene
DUROMETER, SHORE A	30-90	60-99	40-95	40-95	40-75	40-95	40-90	55-95	40-85	40-90
TEMPERATURE, MAX. °F	185	185	220	240	300	275	300	600	460	195
TEMPERATURE, MIN. °F	-60	-30	-50	-40	-60	-60	-60	-10	-150	-50
TENSILE OF BASE	3500 psi	8000 psi	3000 psi	2500 psi	2000 psi	3000 psi	3000 psi	2000 psi	800 psi	2500 psi
ABRASION	Excellent	Outstanding	Excellent	Good	Good	Excellent	Good	Good	Poor	Good
AGING, HEAT	Fair	Good	Good	Good	Very Good	Very Good	Excellent	Outstanding	Outstanding	Fair
AGING, SUNLIGHT	Poor	Good	Very Good	Poor	Very Good	Outstanding	Outstanding	Outstanding	Excellent	Poor
COMPRESSION SET	Good	Fair	Fair	Good	Fair	Fair	Good	Fair	Fair	Good
DYNAMIC PROPERTIES	Excellent	Excellent	Fair	Good	Fair	Fair	Good	Good	Poor	Good
ELECTRICAL INSULATION	Good	Fair	Fair	Poor	Good	Good	Excellent	Fair	Excellent	Good
ELONGATION	Excellent	Excellent	Excellent	Good	Fair	Fair	Good	Good	Fair	Good
FLAME	Poor	Fair	Good	Poor	Poor	Good	Poor	Excellent	Fair	Poor
OIL RESISTANCE, ANIMAL- VEGETABLE	Poor	Good	Good	Very Good	Very Good	Good	Good	Excellent	Good	Poor
OIL RESISTANCE, AROMATIC	Poor	Good	Fair	Good	Poor	Poor	Poor	Good	Poor	Poor
OIL RESISTANCE, LUBRICATING	Poor	Good	Good	Excellent	Poor	Good	Poor	Good	Fair	Poor
OXIDATION	Good	Excellent	Very Good	Good	Excellent	Excellent	Excellent	Outstanding	Excellent	Fair
OZONE	Poor	Excellent	Very Good	Fair	Excellent	Outstanding	Outstanding	Outstanding	Excellent	Poor
PERMEABILITY TO GASES	Fair	Good	Low	Fair	Very Low	Good	Good	Excellent	Fair	Fair
TEAR	Good	Excellent	Good	Fair	Good	Fair	Fair	Fair	Poor	Fair
WATER	Fair	Poor	Fair	Fair	Good	Fair	Excellent	Fair	Fair	Fair
WEATHER	Fair	Excellent	Excellent	Fair	Good	Excellent	Excellent	Excellent	Excellent	Fair

NEOPRENE

- All-purpose outdoor-indoor synthetic rubber resistant to most chemicals, oils, weather, etc.

EPDM

- Outdoor weather resistant even under extremely severe conditions – resistant to color fade – heat – electricity.

NITRILE (Buna N)

- Especially resistant to aromatic hydrocarbons, gasoline, petroleum oils, mineral and vegetable oils.

GRS (Buna S)

- Non oil resistant, economically priced for synthetic rubber – especially noted for its low water absorption properties.

NATURAL (Gum)

- Extremely resilient with high tensile & elongation properties – also resistant to flexing, permanent set & electricity – also used as seals in food and beverage applications.

URETHANE

- Outstanding tensile and abrasion qualities – excellent resistance to wear, ozone, oxygen, kerosene & gasoline.

SILICONE

- Can withstand extreme heat or cold and retain flexibility – normal temperature range of –180°F to 600°F.

VITON®

- In addition to its ability to withstand extreme temperatures, it is also fuel and oil resistant.