Material Properties Chart of Elastomers (Rubber)

Source Sync
ELASTOMER APPLICATION EXPERTS

International Symbol	NR	NBR	CR	FPM FKM	TPE	PUR
Brand Name (e.g.)		**Perbunan®**	**Neoprene®**	Viton®	**SANTOPRENE®**	**Bayflex®**
Chemical Name	Natural rubber	Acrylonitrile-butadiene rubber	Chloroprene rubber	Fluorine rubber Fluorine caoutchouc	Thermoplastic rubber	Polyurethane
Hardness (Shore A)	30 - 90	25 - 95	30 - 90	65 - 90	55 - 87	65 - 90
Temperature resistance:						
short-term	- 60 to +130°C	-40 to +150°C	-30 to +150°C	-30 to +280°C	-40 to +150°C	-40 to +130°C
long-term	-40 to +80°C	-30 to +120°C	-20 to +120°C	-20 to +230°C	-30 to +125°C	-25 to +100°C
Tensile strength [N/mm^2]	--	25	25	20	8,5	20
Wear / Abrasion Resistance	good	good	good	good	good	excellent
Resistance to:						
Oil, grease	not suitable	outstanding	good	good	good	very good
Solvents	low	varies	varies	very good	outstanding	satisfactory
Acids	low	restricted	good	very good	outstanding	not suitable
Caustic solutions	low	good	very good	very good	outstanding	not suitable
Fuels	not suitable	good	slight	outstanding	good	good
General	NR is a material with very good physical properties and excellent mechanical strength. Use e.g. for spring elements. Please note: natural rubber has a characteristic smell.	NBR is a synthetic special rubber for rubber parts with high requirements for resistance to swelling when in contact with oils and fuels. Standard material for O-rings.	CR is one of the most frequently used synthetic rubbers with a wide range of applications for parts which require exceptional resistance to aging, atmospheric and environmental influences.	FPM is unmatched for applications with contact to fuels, oils, solvents, as well as many acids and caustic solutions; resistant to atmospheric and environmental influences. Due to its high price its use is restricted to high quality rubber parts which are exposed to extremely heavy wear.	SANTOPRENE® is a technopolymer rubber, the performance characteristics of which are comparable to those of many customary vulcanized special rubbers. SANTOPRENE® is a multi-purpose material with outstanding dynamic fatigue life and excellent resistance to ozone and atmospheric influences (environmental influences).	PUR is known for exceptionally good mechanical characteristics with very good resistance to atmospheric and environmental influences. In addition, the extreme resistance to tearing and to wear should also be mentioned.

The characteristics described should be treated as guidelines only. No guarantee is made. The exact conditions of use have to be taken into account individually.