

## MATERIAL PROPERTIES OF ELASTOMERS (rubber)

International symbol	NBR	CR	FKM - FPM	TPE	PUR
Brand name (e.g.)	<b>Perbunan®</b>	<b>Neoprene®</b>	<b>Viton®</b>	<b>SANTOPRENE®</b>	<b>Bayflex®</b>
Chemical name	Acrylonitrile-butadiene rubber	Chloroprene rubber	Fluorine rubber	Thermoplastic rubber	Polyurethane
Hardness (Shore A)	25 to 95	30 to 90	65 to 90	55 to 87	65 to 90
Temperature resistance					
short-term	-40° to +150°C	-30° to +150°C	-30° to +280°C	-40° to +150°C	-40° to +130°C
long-term	-30° to +120°C	-20° to +120°C	-20° to +230°C	-30° to +125°C	-25° to +100°C
Tensile strength [N/mm <sup>2</sup> ]	25	25	20	8.5	20
Wear / Abrasion resistance	good	good	good	good	excellent
Resistance to:					
oil, grease	outstanding	good	good	good	very good
solvents	good in part	good in part	very good	outstanding	satisfactory
acids	restricted	good	very good	outstanding	not suitable
caustic solutions	good	very good	very good	outstanding	not suitable
fuels	good	slight	outstanding	good	good
general	<p><i>NBR is a synthetic special rubber for rubber parts with high requirements for resistance to swelling when in contact with oils and fuels.</i></p> <p><i>Standard material for O-rings.</i></p>	<p><i>CR is one of the most frequently used synthetic rubbers with a wide range of applications for parts which require exceptional resistance to ageing, atmospheric and environmental influences.</i></p>	<p><i>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.</i></p> <p><i>Due to its high price its use is restricted to high quality rubber parts which are exposed to extremely heavy wear.</i></p>	<p><i>SANTOPRENE® is a thermoplastic rubber, the performance characteristics of which are comparable to those of many customary vulcanised special rubbers.</i></p> <p><i>SANTOPRENE® is a multi-purpose material with outstanding dynamic fatigue life and excellent resistance to ozone and atmospheric influences (environmental influences).</i></p>	<p><i>PUR is known for exceptionally good mechanical characteristics with very good resistance to atmospheric and environmental influences.</i></p> <p><i>In addition, the extreme resistance to tearing and to wear, should also be mentioned.</i></p>

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.

**Perbunan®** and **Bayflex®** are registered trade-marks of Bayer. - **Viton®** is a registered trade-mark of DuPont Dow Elastomer.

**Neoprene®** is a registered trade-mark of DuPont SBR. - **SANTOPRENE®** is a registered trade-mark of Advanced Elastomer Systems.