10.14 Duroplast, elastomer, technopolymer and rubber characteristics

Elastomer (Rubber)						
International symbol	**NR**	**NBR**	**CR**	**FKM - FPM**	**TPE**	**PUR**
Brand name (es.)		Perbunan®	Neoprene®	Viton®	SANTOPRENE®	Bayflex®
Chemical name	Polisoprene	Acrylonitrile-butadiene Rubber	Chloroprene Rubber	Fluorine Rubber	Thermoplastic Rubber	Polyurethane
Hardness (shore A)	from 30 to 95	from 25 to 95	from 30 to 90	from 65 to 90	from 55 to 87	from 65 to 90
Temperature resistance						
Short-term	from -55° to +100 °C	from -40° to +150 °C	from -30° to +150 °C	from -30° to +280 °C	from -40° to +150 °C	from -40° to +130 °C
Long-term	from -50° to +80 °C	from -30° to +120 °C	from -20° to +120 °C	from -20° to +230 °C	from -30° to +125 °C	from -25° to +100 °C
Tensile strength [N/mm^2]	27	25	25	20	8.5	20
Wear / Abrasion resistance	excellent	good	good	good	good	excellent
Resistance to						
Oil, grease	not suitable	outstanding	good	good	good	very good
Solvents	low	good in part	good in part	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		NBR Synthetic rubber resistance to swelling when in contact with oils and fuels. Standard material for O-rings.	CR Synthetic rubber excellent resistance to ageing, atmospheric and environmental influences.	FPM Resistance to contact with fuels, oils, solvents, acids, caustic solutions and to atmospheric and environmental influences. High price, to be used for applications under severe conditions.	SANTOPRENE® Thermoplastic rubber, its performances are comparable to those of many customary vulcanised special rubbers. Outstanding dynamic fatigue life, excellent resistance to ozone and to atmospheric and environmental influences.	PUR Excellent mechanical characteristics, resistance to atmospheric and environmental influences. Extreme resistance to wear and tear.

Perbunan® and Bayflex® are registered trade-marks by Bayer.
Viton® is registered trade-mark by DuPont Dow Elastomer.
Neoprene® is registered trade-mark by DuPont SBR.
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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.