POLYURETHANE PREPOLYMER · POLYESTER / TDI

REACTAN PES-90

TDI-terminated polyester prepolymer for 90 Shore A elastomers



LOW FREE TDI · LOW VISCOSITY · LONG GEL TIME · ABRASION RESISTANCE · HIGH MECHANICAL STRENGTH · HIGH LOAD CAPACITY

4.3 ± 0.2 %
NCO content

90 Shore A
Hardness, MOCA-cured

85 / 110 °C
Process temperature · prepolymer / MOCA

Description

A polyester prepolymer with TDI (toluene diisocyanate) end groups, formulated for high-performance industrial applications. Its low viscosity eases processing even at low temperatures, allowing simpler and more efficient handling of the material. In addition, its low free TDI content reduces the risks associated with handling isocyanates. It provides excellent thermal stability and a long gel time, giving a wider margin for adjustments during processing.

Applications

Used to produce polyurethane elastomers with high mechanical strength and durability for rollers, wheels, mats, seals and other applications that require high wear and abrasion resistance. It yields elastomers with a hardness of 90 Shore A when MOCA is used as the curative, or below 60 Shore A with TIPA/TMP. Its combination of high load-bearing capacity, abrasion resistance and versatility in hardness makes it a reliable solution for demanding applications.

CURATIVE AND RESULTING HARDNESS

CURATIVE	HARDNESS
MOCA (13.6 g per 100 g of PES-90)	90 Shore A
TIPA/TMP	< 60 Shore A

Note: to adjust hardness with TIPA/TMP, contact technical support.

PROPERTIES AND APPEARANCE

PROPERTY	VALUE
NCO content	4.3 ± 0.2 %
Appearance at 25 °C	White solid
Color, Gardner	0–3
Viscosity at 85 °C	900–1200 cP
Specific gravity	1.18

PROCESSING CONDITIONS

PROPERTY	VALUE
MOCA per 100 g of PES-90	13.6 g
Prepolymer temperature	85 °C
MOCA temperature	110 °C
Mold temperature	100 °C
Gel time at 80 °C	8–10 min
Post-cure at 110 °C	16 h

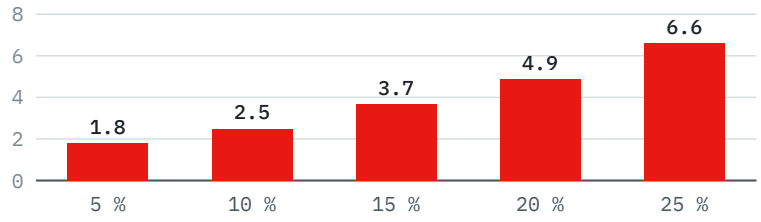
Note: temperature of each component at the time of mixing.

MECHANICAL PROPERTIES (MOCA-CURED)

PROPERTY	CONDITION	VALUE
Hardness		**90 ± 1 Shore A**
Tensile modulus	100 %	10 MPa
Tensile modulus	200 %	13 MPa
Tensile modulus	300 %	19 MPa
Tensile strength		52 MPa
Elongation at break		571 %
Tear strength	Unnicked	105.1 kN/m
Tear strength	Nicked	47.3 kN/m
Abrasion loss		48 mm³
Compression set	22 h at 70 °C	11.7 %
Specific gravity	Elastomer	1.25
Compression modulus	5 %	1.8 MPa
Compression modulus	10 %	2.5 MPa
Compression modulus	15 %	3.7 MPa
Compression modulus	20 %	4.9 MPa
Compression modulus	25 %	6.6 MPa

COMPRESSION MODULUS

MPa by deflection · MOCA-cured



PACKAGING

200 kg Drum

20 kg Pail

Storage

Store in a cool, dry place. Blanket the container with nitrogen after each use. Avoid prolonged exposure to sunlight.

Safety

Use in an open, well-ventilated area. Avoid skin contact and, where possible, wear gloves and protective clothing. Avoid eye contact and wear safety glasses at all times. In case of contact with any part of the body (skin or eyes), rinse with plenty of water and soap for at least 15 minutes and seek immediate medical attention. If the product gets on clothing, remove the contaminated clothing and rinse the affected area with water. If swallowed, seek immediate medical attention. Do not induce vomiting unless recommended by a physician and as directed.

Ventilation · Gloves · Safety glasses

Disclaimer

This information is provided for guidance only. Users of this product should carry out their own tests and analyses to ensure its suitability for the intended applications. The information presented here is accurate to the best of our knowledge as of the date of this data sheet, but we do not warrant that it is complete or accurate. Users should also be aware that product specifications and regulatory requirements may change over time. For product-specific details and availability, please contact your supplier or manufacturer.