



Elastollan® 1185 A

Elastogran GmbH - Thermoplastic Polyurethane Elastomer (Polyether)

Monday, March 02, 2009

General Information

Product Description

Thermoplastic Polyether-Polyurethane-Elastomer with outstanding hydrolysis resistance, low temperature flexibility and high resistance to micro-organisms.

Processable by injection moulding, extrusion and blow moulding.

General

Material Status	• Commercial: Active		
Availability	• Europe		
Features	• Bacteria Resistant	• Hydrolysis Resistant	• Low Temperature Flexibility
Forms	• Pellets		
Processing Method	• Blow Molding	• Extrusion	• Injection Molding
Multi-Point Data	• Creep Modulus vs. Time (ISO 11403-1)	• Isothermal Stress vs. Strain (ISO 11403-1)	• Shear Modulus vs. Temperature (ISO 11403-2)
	• Isochronous Stress vs. Strain (ISO 11403-1)	• Secant Modulus vs. Strain (ISO 11403-1)	• Viscosity vs. Shear Rate (ISO 11403-2)

ASTM and ISO Properties ¹

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density			
--	1.12 g/cm ³	1.12 g/cm ³	ISO 1183/A
--	0.0405 lb/in ³	1120 kg/m ³	ISO 1183 ²
Water Absorption			ISO 62 ²
Saturation	1.9 %	1.9 %	
Equilibrium	0.60 %	0.60 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile modulus	2900 psi	20.0 MPa	ISO 527-2 ²
Tensile Stress (50% Strain)	725 psi	5.00 MPa	ISO 527-2 ²
Nominal strain at break	> 50 %	> 50 %	ISO 527-2 ²
Abrasion (Method A)	25 mm ³	25 mm ³	ISO 4649
Elastomers	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Stress			DIN 53504
20% Strain	363 psi	2.50 MPa	
100% Strain	870 psi	6.00 MPa	
300% Strain	1450 psi	10.0 MPa	
Tensile Stress (Yield)	6530 psi	45.0 MPa	DIN 53504
Tensile Elongation (Break)	600 %	600 %	DIN 53504
Tear Strength ³	400 lbf/in	70 kN/m	ISO 34-1
Compression Set (158°F (70°C))	45 %	45 %	ISO 815

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Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			
-22°F (-30°C)	No Break	No Break	ISO 179
73°F (23°C)	No Break	No Break	ISO 179
23°C	No Break	No Break	ISO 179/1eA ²
-30°C	No Break	No Break	ISO 179/1eA ²
Charpy impact strength			ISO 179/1eU ²
23°C	No Break	No Break	
-30°C	No Break	No Break	
Tensile notched impact strength (23°C)	276 ft-lb/in ²	580 kJ/m ²	ISO 8256/1 ²
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Shore Hardness			DIN 53505
Shore A	87	87	
Shore D	36	36	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Glass Transition Temperature ⁴	-44 °F	-42 °C	ISO 11357-2 ²
CLTE - Flow	0.00010 in/in/°F	0.00018 cm/cm/°C	ISO 11359-2 ²
Aging	Nominal Value (English)	Nominal Value (SI)	Test Method
Change in Tensile Strength			DIN 53504
176°F (80°C), 1008 hr, in Water	-29 %	-29 %	
Change in Tensile Strain at Break			DIN 53504
176°F (80°C), 1008 hr, in Water	0.0 %	0.0 %	
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface resistivity	1.0E+15 ohms	1.0E+15 ohms	IEC 60093 ²
Volume resistivity	3.9E+11 ohm-in	1.0E+10 ohm-m	IEC 60093 ²
Relative Permittivity			IEC 60250 ²
100 Hz	7.90	7.90	
1 MHz	5.60	5.60	
Dissipation Factor			IEC 60250 ²
100 Hz	0.030	0.030	
1 MHz	0.095	0.095	
Comparative tracking index	600	600	IEC 60112 ²
Electric strength	890 V/mil	35 kV/mm	IEC 60243-1 ²
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating - UL	HB	HB	UL 94
Burning Behav. at thickness h			ISO 1210 ²
0.0323 in (0.820 mm), UL	HB	HB	
Oxygen index	23 %	23 %	ISO 4589-2 ²

Notes

- ¹ Typical properties: these are not to be construed as specifications.
² Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
³ Method Bb, Angle (Nicked)
⁴ 10 °C/min