



## PEARLTHANE® 11T85

Merquinsa - Thermoplastic Polyurethane Elastomer (Polyester)

Monday, August 04, 2008

### General Information

#### Product Description

PEARLTHANE® 11T85 is a polyester based TPU, supplied in form of translucent, colourless or slightly yellowish pellets, offering adequate hardness, excellent mechanical properties and easy processing. Ideally used for injection molding.

PEARLTHANE® 11T85 when processed by injection moulding, can be used for making shoe soles, screens (mining ind.), automotive parts, etc.

#### General

Material Status	• Commercial: Active	
Availability	• Europe	• North America
Features	• Good Processability	• Medium Hardness
Uses	• Automotive Applications • Engineering Parts	• Footwear • Mining Applications
Appearance	• Translucent	• Yellow
Forms	• Pellets	
Processing Method	• Injection Molding	

### ASTM and ISO Properties <sup>1</sup>

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity	1.17	1.17	ASTM D792
Density	1.16 g/cm <sup>3</sup>	1.16 g/cm <sup>3</sup>	ISO 1183

Elastomers	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Stress (100% Strain)	870 psi	6.00 MPa	ASTM D412
Tensile Stress (100% Strain)	870 psi	6.00 MPa	ISO 37
Tensile Stress (300% Strain)	1450 psi	10.00 MPa	ASTM D412
Tensile Stress (300% Strain)	1450 psi	10.0 MPa	ISO 37
Tensile Strength (Yield)	5800 psi	40.0 MPa	ASTM D412
Tensile Stress (Yield)	5800 psi	40.0 MPa	ISO 37
Tensile Elongation (Break)	600 %	600 %	ASTM D412
Tensile Elongation (Break)	640 %	640 %	ISO 37
Tear Strength (Die C)	520 lbf/in	90 kN/m	ASTM D624
Tear Strength	510 lbf/in	90 kN/m	ISO 34-1
Compression Set			ASTM D395
73 °F (23 °C), 70.0 hr	25 %	25 %	
158 °F (70 °C), 24.0 hr	35 %	35 %	

Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Durometer Hardness (Shore A)	86	86	ASTM D2240
Shore Hardness (Shore A)	86	86	ISO 868

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Glass Transition Temperature	-49.0 °F	-45.0 °C	DSC
Melting Temperature	352 to 370 °F	178 to 188 °C	

#### Additional Properties

Melting Range, MQSA 111: 178 to 188°C

Abrasion Loss, DIN 53.516: 20 mm<sup>3</sup>

Moisture Content, MQSA 44: <0.1%

The value listed as Glass Transition Temp DSC, was tested in accordance with DIN 51.007.

All ISO values were tested in accordance to DIN test standards.

Density, DIN 53.479, 20°C: 1.16 g/cm<sup>3</sup>

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<b>Processing Information</b>		
<b>Injection</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>
Drying Temperature	210 to 230 °F	98.9 to 110 °C
Drying Time	1.0 to 2.0 hr	1.0 to 2.0 hr
Rear Temperature	380 °F	193 °C
Middle Temperature	390 °F	199 °C
Front Temperature	410 °F	210 °C
Nozzle Temperature	410 °F	210 °C
Mold Temperature	95.0 °F	35.0 °C
Injection Pressure	1450 psi	10.00 MPa
Holding Pressure	870 psi	6.00 MPa
Screw Speed	105 rpm	105 rpm
Screw L/D Ratio	23.0:1.0	23.0:1.0

**Injection Notes**

Injection Cooling Time: 10sec  
Injection Holding Time: 15sec  
Injection Time: 2.8sec  
Closing force: : 30 tons  
Screw diameter: : 1.02 in  
Maximum hydraulic pressure: : 3050 psi.  
Mould: : Plaque 4.7x4.7x0.08 in.

**Notes**

<sup>1</sup> Typical properties: these are not to be construed as specifications.