

Pearlthane® 12H92E

Thermoplastic Polyurethane Elastomer (Polyester)

Lubrizol Advanced Materials, Inc.

Message:

Pearlthane® 12H92E is a special polyester-based TPU, supplied in form of translucent, colourless pellets, combining hardness with excellent processability and excellent low temperature performance. This grade has been specially designed for mechanically demanding applications where excellent mechanical properties are required, such as timing belts.

General Information			
Features	Workability, good		
	Low temperature resistance		
	Medium hardness		
Uses	Conveyor belt repair		
Appearance	Translucent		
	Colorless		
Forms	Particle		
Processing Method	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
-- ¹	1.19	g/cm ³	ASTM D792
20°C	1.19	g/cm ³	ISO 2781
Moisture Content		%	Internal method
Abrasion Loss	25.0	mm ³	ISO 4649
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A)	91		ASTM D2240, ISO 868
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ASTM D412, ISO 527
100% strain	7.00	MPa	ASTM D412, ISO 527
300% strain	15.0	MPa	ASTM D412, ISO 527
Tensile Strength (Yield)	40.0	MPa	ASTM D412, ISO 527
Tensile Elongation (Break)	510	%	ASTM D412, ISO 527
Tear Strength			
-- ²	130	kN/m	ASTM D624
-- ³	130	kN/m	ISO 34-1
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature ⁴	-45.0	°C	ISO 11357-2
Melting Temperature ⁵	190 - 200	°C	Internal method

Injection	Nominal Value	Unit
Drying Temperature	100 - 110	°C
Drying Time	1.0 - 2.0	hr
Rear Temperature	195	°C
Middle Temperature	205	°C
Front Temperature	205	°C
Nozzle Temperature	210	°C
Mold Temperature	35.0	°C
Screw L/D Ratio	23.0:1.0	

Injection instructions

Closing Force: 30 tonsScrew Diameter: 30 mmMaximum Hydraulic Pressure: 210 barMould: : Plaque 120x120x2 mm

Extrusion	Nominal Value	Unit
Drying Temperature	100 - 110	°C
Drying Time	1.0 - 2.0	hr
Cylinder Zone 1 Temp.	200 - 210	°C
Cylinder Zone 2 Temp.	210 - 220	°C
Cylinder Zone 3 Temp.	220 - 230	°C
Cylinder Zone 4 Temp.	210 - 220	°C
Die Temperature	200 - 210	°C

Extrusion instructions

Type: 30/25d (l/d = 25:1), Cooling: Air, Screw: 3:1, Speed: 40 rpm, Thickness Die: 0,2 mm, Pre-heating: 1h @ 100 °C (212 °F).

NOTE

1. 20°C
2. C mould
3. Method B
4. 10°C /min
5. Temperature at which MFI = 10 g/10 min @ 21.6 kg

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