

Pearlthane® 12T92E

Thermoplastic Polyurethane Elastomer (Polyester)

Lubrizol Advanced Materials, Inc.

Message:

Pearlthane® 12T92E is a special polyester-based TPU, supplied in form of translucent, colourless pellets, combining hardness with excellent processability and low temperature performance. This grade has been specially designed for mechanically demanding applications where excellent mechanical properties are required, such as timing belts

Pearlthane® 12T92E can be extruded into profiles, belts, tubes and film. In the case of injection moulding, this grade is only recommended for certain applications, e.g. when large, hard-to-fill mould cavities are used.

General Information			
Features	Workability, good		
	Low temperature resistance		
	Medium hardness		
Uses	Films		
	Conveyor belt repair		
	Pipe fittings		
	Profile		
Agency Ratings	EC 1907/2006 (REACH)		
Appearance	Translucent		
	Colorless		
Forms	Particle		
Processing Method	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.20	g/cm ³	ASTM D792
20°C	1.20	g/cm ³	ISO 2781
Moisture Content		%	Internal method
Abrasion Loss	30.0	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	8.00	MPa	ASTM D412, ISO 527
300% strain	16.0	MPa	ASTM D412, ISO 527
Tensile Strength (Yield)	40.0	MPa	ASTM D412, ISO 527

Tensile Elongation (Break)	500	%	ASTM D412, ISO 527
Tear Strength			
-- ¹	112	kN/m	ASTM D624
--	110	kN/m	ISO 34-1
Compression Set			
23°C, 70 hr	26	%	ASTM D395B
70°C, 22 hr	40	%	ASTM D395B
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature ²	-40.0	°C	ISO 11357-2
Melting Temperature ³	183 - 193	°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	200	°C	
Front Temperature	210	°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.	190 - 200	°C	
Cylinder Zone 2 Temp.	195 - 210	°C	
Cylinder Zone 3 Temp.	200 - 215	°C	
Cylinder Zone 4 Temp.	200 - 220	°C	
Die Temperature	190 - 210	°C	
Extrusion instructions			
L/D Ratio: 25:1 to 30:1Screw Compression Ratio: 2:1 to 3:1Screw Speed: 12 to 60 rpm			
NOTE			
1.	C mould		
2.	10°C /min		
3.	Temperature at which MFI = 10 g/10 min @ 21.6 kg		

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