

Pearlthane® 11T92E

Thermoplastic Polyurethane Elastomer (Polycaprolactone)

Lubrizol Advanced Materials, Inc.

Message:

PEARLTHANE 11T92E is a polyester based TPU, supplied in form of translucent, colourless pellets, combining hardness with excellent mechanical properties. It can be extruded and injection-moulded.

PEARLTHANE 11T92E can be extruded into profiles, belts, tubes and film. In the case of injection moulding, this grade is only recommended for certain specific applications, e.g. when large, hard-to-fill mould cavities are used.

General Information			
Features	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			
--	1.17	g/cm ³	ASTM D792
20°C	1.17	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)	93		ASTM D2240, ISO 868
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ASTM D412, ISO 527
100% strain	10.0	MPa	ASTM D412, ISO 527
300% strain	21.0	MPa	ASTM D412, ISO 527
Tensile Strength (Yield)	42.0	MPa	ASTM D412, ISO 527
Tensile Elongation (Break)	560	%	ASTM D412, ISO 527
Tear Strength			
-- ¹	130	kN/m	ASTM D624
--	130	kN/m	ISO 34-1

Compression Set			ASTM D395B
23°C, 70 hr	25	%	ASTM D395B
70°C, 22 hr	45	%	ASTM D395B
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature ²	-34.0	°C	ISO 11357-2
Melting Temperature ³	197 - 207	°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	210	°C	
Front Temperature	215	°C	
Nozzle Temperature	210	°C	
Mold Temperature	35.0	°C	
Injection instructions			
Closing force: : 30 tonsScrew diameter: : 30 mmMaximum hydraulic pressure: : 210 barMould Plaque 120x120x2 mmL/D ratio: : 23			
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			
Extruder Speed: 40rpmExtrusion Compression Ratio: 2:1 to 3:1Extrusion L/D Ratio: 25:1 to 30:1			
NOTE			
1.	C mould		
2.	10°C /min		
3.	Temperature at which MFI = 10 g/10 min @ 21.6 kg		

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