

Pearlthane® 11T80

Thermoplastic Polyurethane Elastomer (Polycaprolactone)

Lubrizol Advanced Materials, Inc.

Message:

PEARLTHANE 11T80 is a polycaprolactone-copolyester based TPU, supplied in form of translucent, colourless pellets, combining hardness with excellent mechanical properties as well as an improved transparency. It can be extruded and injection-moulded.

PEARLTHANE 11T80 when extruded, is used for making films, tubing, profiles and a variety of technical components. When processed by injection moulding, can be used for making automotive parts and technical parts.

General Information	
Features	Definition, high
	Medium hardness
Uses	Films
	Engineering accessories
	Pipe fittings
	Application in Automobile Field
	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			
--	1.16	g/cm ³	ASTM D792
20°C	1.16	g/cm ³	ISO 2781
Moisture Content		%	Internal method
Abrasion Loss	20.0	mm ³	ISO 4649
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A)	82		ASTM D2240, ISO 868
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ASTM D412, ISO 527
100% strain	5.00	MPa	ASTM D412, ISO 527
300% strain	8.00	MPa	ASTM D412, ISO 527
Tensile Strength (Yield)	40.0	MPa	ASTM D412, ISO 527
Tensile Elongation (Break)	630	%	ASTM D412, ISO 527

Tear Strength			
-- ¹	80.0	kN/m	ASTM D624
--	80	kN/m	ISO 34-1
Compression Set			ASTM D395B
23°C, 70 hr	27	%	ASTM D395B
70°C, 22 hr	36	%	ASTM D395B
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature ²	-45.0	°C	ISO 11357-2
Melting Temperature ³	176 - 186	°C	Internal method
Injection	Nominal Value	Unit	
Drying Temperature	100 - 110	°C	
Drying Time	1.0 - 2.0	hr	
Rear Temperature	190	°C	
Middle Temperature	195	°C	
Front Temperature	205	°C	
Nozzle Temperature	210	°C	
Mold Temperature	35.0	°C	
Screw Speed	75	rpm	
Screw L/D Ratio	23.0:1.0		
Screw Compression Ratio	2.0 : 1.0 - 3.0 : 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.	180 - 210	°C	
Cylinder Zone 2 Temp.	185 - 215	°C	
Cylinder Zone 3 Temp.	190 - 220	°C	
Cylinder Zone 4 Temp.	185 - 215	°C	
Die Temperature	185 - 200	°C	
Extrusion instructions			
Extruder Speed: 12 to 60 rpmExtrusion 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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