

Pearlthane® 11T98

Thermoplastic Polyurethane Elastomer (Polycaprolactone)

Lubrizol Advanced Materials, Inc.

Message:

PEARLTHANE® 11T98 is a polycaprolactone copolyester based TPU, supplied in form of translucent, colourless pellets, combining high hardness with excellent mechanical properties. It can be extruded and injection-moulded.

General Information			
Features	High hardness		
Agency Ratings	EC 1907/2006 (REACH)		
Appearance	Translucent		
	Colorless		
Forms	Particle		
Processing Method	Extrusion		
	Injection molding		

Physical	Nominal Value	Unit	Test Method
Density (20°C)	1.18	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			ISO 868
Shaw A	98		ISO 868
Shaw D	52		ISO 868

Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ISO 527
100% strain	16.0	MPa	ISO 527
300% strain	29.0	MPa	ISO 527
Tensile Stress (Yield)	40.0	MPa	ISO 527
Tensile Elongation (Break)	470	%	ISO 527
Tear Strength	180	kN/m	ISO 34-1
Compression Set			ASTM D395B
23°C, 70 hr	35	%	ASTM D395B
70°C, 24 hr	42	%	ASTM D395B

Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature ¹	-30.0	°C	ISO 11357-2
Melting Temperature ²	193 - 203	°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	215	°C
Nozzle Temperature	205	°C
Mold Temperature	35.0	°C
Screw L/D Ratio	23.0:1.0	

Injection instructions

Closing force: : 30 tonsScrew diameter: : 26 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.	170 - 200	°C
Cylinder Zone 2 Temp.	180 - 210	°C
Cylinder Zone 3 Temp.	190 - 215	°C
Cylinder Zone 4 Temp.	200 - 220	°C
Die Temperature	215 - 220	°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. 10°C /min
2. Temperature at which MFI = 10
g/10 min @ 21.6 kg

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