

Pearlthane® CLEAR 15N70

Thermoplastic Polyurethane Elastomer (Polyether)

Lubrizol Advanced Materials, Inc.

Message:

PEARLTHANE® CLEAR 15N70 is a polyether copolymer-based TPU with Shore 72 A hardness, free of plasticizer, supplied in form of translucent, colorless pellets with very low yellowness index. PEARLTHANE® CLEAR 15N70 combines low hardness and high elasticity with excellent mechanical properties and excellent hydrolysis resistance. It can be extruded and injection-molded.

Pearlthane® CLEAR 15N70 when extruded is used for making films, tubing, profiles and a variety of technical parts. When processed by injection moulding, it can be used for making soft shoe soles and engineering technical parts. To improve the microbiological protection of PEARLTHANE® CLEAR 15N70, it is necessary to add a biocide, preferably in form of TPU-based masterbatch.

General Information	
Features	High elasticity Hydrolysis resistance Hardness, low
Uses	Films Engineering accessories Pipe fittings Footwear 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			
--	1.07	g/cm ³	ASTM D792
20°C	1.07	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)	72		ASTM D2240, ISO 868
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ASTM D412, ISO 527
100% strain	3.00	MPa	ASTM D412, ISO 527
300% strain	5.00	MPa	ASTM D412, ISO 527

Tensile Strength (Yield)	30.0	MPa	ASTM D412, ISO 527
Tensile Elongation (Break)	710	%	ASTM D412, ISO 527
Tear Strength			
-- ¹	65.0	kN/m	ASTM D624
--	65	kN/m	ISO 34-1
Compression Set			
23°C, 70 hr	30	%	ASTM D395B
70°C, 24 hr	60	%	ASTM D395B
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature ²	-53.0	°C	ISO 11357-2
Melting Temperature ³	168 - 178	°C	Internal method
Injection	Nominal Value	Unit	
Drying Temperature	100 - 110	°C	
Drying Time	1.0 - 2.0	hr	
Rear Temperature	180	°C	
Middle Temperature	190	°C	
Front Temperature	200	°C	
Nozzle Temperature	200	°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 mmL/D ratio: :23			
Extrusion	Nominal Value	Unit	
Drying Temperature	100 - 110	°C	
Drying Time	1.0 - 2.0	hr	
Cylinder Zone 1 Temp.	170 - 190	°C	
Cylinder Zone 2 Temp.	180 - 205	°C	
Cylinder Zone 3 Temp.	190 - 215	°C	
Cylinder Zone 4 Temp.	180 - 190	°C	
Die Temperature	185 - 190	°C	
Extrusion instructions			
Extruder Speed: 12 to 60rpmExtrusion 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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