

Pearlthane® CLEAR 15N85

Thermoplastic Polyurethane Elastomer (Polyether)

Lubrizol Advanced Materials, Inc.

Message:

Pearlthane® CLEAR 15N85 is a polyether copolymer based TPU containing an anti-UV additive, supplied in form of transparent, colourless pellets, combining excellent mechanical properties and a good hydrolysis resistance. It can be extruded and injection moulded. PEARLTHANE® CLEAR 15N85 features outstanding colour, a very low yellowness index, as well as unique transparency. Pearlthane® CLEAR 15N85 can be used in footwear for making visible transparent and highly colourless components, as well as in technical parts such as seals. To improve the microbiological protection of PEARLTHANE® CLEAR 15N85, it is necessary to add a biocide, preferably in form of a TPU-based masterbatch.

General Information			
Features	Copolymer		
	Hydrolysis resistance		
	Hardness, low		
Uses	Engineering accessories		
	Seals		
	Footwear		
Agency Ratings	EC 1907/2006 (REACH)		
Appearance	Translucent		
	Colorless		
Forms	Particle		
Processing Method	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.11	g/cm ³	ASTM D792
20°C	1.11	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)	86		ASTM D2240, ISO 868
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ASTM D412, ISO 527
100% strain	6.00	MPa	ASTM D412, ISO 527
300% strain	10.0	MPa	ASTM D412, ISO 527
Tensile Strength (Yield)	35.0	MPa	ASTM D412, ISO 527

Tensile Elongation (Break)	660	%	ASTM D412, ISO 527
Tear Strength			
-- ¹	95.0	kN/m	ASTM D624
--	95	kN/m	ISO 34-1
Compression Set			ASTM D395B
23°C, 70 hr	23	%	ASTM D395B
70°C, 22 hr	37	%	ASTM D395B
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature ²	-52.0	°C	ISO 11357-2
Melting Temperature ³	200 - 210	°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	195	°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: : Plaque120x120x2 mmL/D ratio: : 23			
Extrusion	Nominal Value	Unit	
Drying Temperature	100 - 110	°C	
Drying Time	1.0 - 2.0	hr	
Cylinder Zone 1 Temp.	185 - 200	°C	
Cylinder Zone 2 Temp.	200 - 230	°C	
Cylinder Zone 3 Temp.	210 - 230	°C	
Cylinder Zone 4 Temp.	200 - 220	°C	
Die Temperature	190 - 195	°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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