

Generic TPU-Polyether

Thermoplastic Polyurethane Elastomer (Polyether)

Generic

Message:

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General Information			
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.10 - 1.17	g/cm ³	ASTM D792
23°C	1.06 - 1.21	g/cm ³	ISO 1183
--	1110	kg/m ³	ISO 1183 ¹
--	0.300 - 1.05	g/cm ³	ASTM D1505
Melt Mass-Flow Rate (MFR) (190°C/8.7 kg)	14 - 24	g/10 min	ASTM D1238
Molding Shrinkage			
Flow: 23°C	0.63 - 0.90	%	ASTM D955
Transverse flow: 23°C	0.80 - 0.82	%	ASTM D955
23°C	0.80 - 0.81	%	ISO 294-4
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			
23°C	50 - 96		ASTM D2240
23°C	34 - 98		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
23°C	5.52 - 63.6	MPa	ASTM D638
23°C	90.0 - 808	MPa	ISO 527-2
Tensile Stress			
Fracture, 23°C	25.0 - 53.1	MPa	ISO 527-2
23°C	1.00 - 44.1	MPa	ASTM D638
23°C	1.00 - 35.2	MPa	ISO 527-2
Tensile Elongation			
Fracture, 23°C	340 - 610	%	ASTM D638
Fracture, 23°C	340 - 800	%	ISO 527-2
Flexural Modulus			
23°C	4.83 - 121	MPa	ASTM D790
23°C	18.6 - 193	MPa	ISO 178
Taber Abrasion Resistance (23°C)	3.00 - 78.9	mg	ASTM D1044
Films	Nominal Value	Unit	Test Method
Water Vapor Transmission	400 - 9100	g/m ² /24 hr	ASTM E96

Elastomers	Nominal Value	Unit	Test Method
Tensile Set (23°C)	6 - 21	%	ASTM D412
Tensile Stress			
20% strain, 23°C	1.99 - 16.5	MPa	ISO 37
50% strain, 23°C	1.10 - 12.3	MPa	ASTM D412
100% strain, 23°C	2.42 - 17.6	MPa	ASTM D412
100% strain, 23°C	2.78 - 25.3	MPa	ISO 37
300% strain, 23°C	4.94 - 36.6	MPa	ASTM D412
300% strain, 23°C	4.80 - 45.0	MPa	ISO 37
Tensile Strength			
Yield, 23°C	14.7 - 44.0	MPa	ASTM D412
Yield, 23°C	29.5 - 50.7	MPa	ISO 37
Fracture, 23°C	23.4 - 56.3	MPa	ASTM D412
Fracture, 23°C	25.3 - 51.7	MPa	ISO 37
23°C	24.4 - 50.3	MPa	ASTM D412
Tensile Elongation			
Fracture, 23°C	350 - 780	%	ASTM D412
Fracture, 23°C	350 - 760	%	ISO 37
Tensile Elongation at Break	55	%	ASTM D412
Tear Strength			
23°C	47.6 - 167	kN/m	ASTM D624
Cracking	29	kN/m	ASTM D470
23°C	39 - 190	kN/m	ISO 34-1
Compression Set			
--	19 - 47	%	ASTM D395
23°C	20 - 40	%	ISO 815
Bayshore Resilience	35 - 51	%	ASTM D2632
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength (23°C)	-28 - 13	%	ASTM D471
Change in Volume (23°C)	0.50 - 36	%	ASTM D471
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-68.6 - -35.8	°C	ASTM D746
Glass Transition Temperature			
--	-48.4 - -13.5	°C	ASTM E1356
--	-60.7 - -26.3	°C	DSC
Vicat Softening Temperature			
--	66.7 - 145	°C	ASTM D1525
--	75.0 - 139	°C	ISO 306
Melting Temperature			
--	175 - 205	°C	
--	134 - 176	°C	DSC
CLTE - Flow	1.3E-4 - 1.7E-4	cm/cm/°C	ASTM D696

Optical	Nominal Value	Unit	Test Method
Haze	0.15 - 3.0	%	ASTM D1003
Injection	Nominal Value	Unit	
Drying Temperature	54.4 - 115	°C	
Drying Time	2.0 - 4.1	hr	
Dew Point	-40.0 - -17.8	°C	
Suggested Max Moisture	3.0E-3 - 0.070	%	
Rear Temperature	176 - 206	°C	
Middle Temperature	185 - 206	°C	
Front Temperature	189 - 221	°C	
Nozzle Temperature	196 - 231	°C	
Processing (Melt) Temp	201 - 228	°C	
Mold Temperature	16.0 - 52.0	°C	
Injection Pressure	67.3 - 86.3	MPa	
Back Pressure	0.733 - 5.52	MPa	
Screw Speed	59 - 130	rpm	
Clamp Tonnage	5.5	kN/cm ²	
Cushion	3.18 - 3.49	mm	

Injection instructions

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Extrusion	Nominal Value	Unit
Drying Temperature	54.4 - 117	°C
Drying Time	1.9 - 4.0	hr
Suggested Max Moisture	0.020 - 0.070	%
Hopper Temperature	32.5 - 36.1	°C
Cylinder Zone 1 Temp.	169 - 194	°C
Cylinder Zone 2 Temp.	177 - 200	°C
Cylinder Zone 3 Temp.	177 - 212	°C
Cylinder Zone 4 Temp.	179 - 210	°C
Cylinder Zone 5 Temp.	180 - 191	°C
Adapter Temperature	184 - 211	°C
Melt Temperature	189 - 215	°C
Die Temperature	189 - 206	°C

Extrusion instructions

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NOTE

1. ??????,?? ISO 10350 ???
23°C/50%r.h. ???

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