

Generic TPU-Polyester

Thermoplastic Polyurethane Elastomer (Polyester)

Generic

Message:

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This information is provided for comparative purposes only.

General Information			
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.14 - 1.23	g/cm ³	ASTM D792
23°C	1.15 - 1.25	g/cm ³	ISO 1183
--	1210	kg/m ³	ISO 1183 ¹
--	0.340 - 1.22	g/cm ³	ASTM D1505
Melt Volume-Flow Rate (MVR) (190°C/21.6 kg)	34.1 - 76.6	cm ³ /10min	ISO 1133
Molding Shrinkage			
Flow: 23°C	0.39 - 1.1	%	ASTM D955
Transverse flow: 23°C	0.79 - 0.82	%	ASTM D955
23°C	0.76 - 0.82	%	ISO 294-4
Water Absorption (23°C, 24 hr)	0.30 - 0.40	%	ASTM D570
Solution Viscosity	14850 - 35000	mPa·s	ASTM D445
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			
23°C	34 - 96		ASTM D2240
23°C	30 - 98		ISO 868
Shaw A, 3 sec	80 - 98		ISO 868 ²
Shaw D, 15 sec	32 - 60		ISO 868 ³
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	140 - 730	MPa	ISO 527-2
Tensile Stress			
Fracture, 23°C	27.2 - 63.5	MPa	ISO 527-2
23°C	1.00 - 45.9	MPa	ASTM D638
23°C	0.500 - 22.5	MPa	ISO 527-2
Tensile Elongation			
Fracture, 23°C	10 - 740	%	ASTM D638
Fracture, 23°C	320 - 940	%	ISO 527-2
Flexural Modulus			
23°C	13.4 - 403	MPa	ASTM D790
23°C	13.4 - 367	MPa	ISO 178
Taber Abrasion Resistance (23°C)	8.80 - 71.2	mg	ASTM D1044

Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			
20% strain, 23°C	0.500 - 8.06	MPa	ISO 37
50% strain, 23°C	1.68 - 15.3	MPa	ASTM D412
100% strain, 23°C	1.62 - 19.1	MPa	ASTM D412
100% strain, 23°C	1.00 - 11.2	MPa	ISO 37
300% strain, 23°C	3.00 - 29.7	MPa	ASTM D412
300% strain, 23°C	1.50 - 35.2	MPa	ISO 37
Tensile Strength			
Yield, 23°C	23.7 - 55.7	MPa	ASTM D412
Yield, 23°C	24.6 - 55.0	MPa	ISO 37
Fracture, 23°C	23.7 - 64.1	MPa	ASTM D412
Fracture, 23°C	19.0 - 55.0	MPa	ISO 37
23°C	25.0 - 40.3	MPa	ASTM D412
Tensile Elongation			
Yield	390 - 800	%	ASTM D412
Fracture, 23°C	340 - 750	%	ASTM D412
Fracture, 23°C	300 - 950	%	ISO 37
Tear Strength			
23°C	33.3 - 206	kN/m	ASTM D624
Cracking	34	kN/m	ASTM D470
23°C	32 - 190	kN/m	ISO 34-1
Compression Set			
--	18 - 76	%	ASTM D395
23°C	19 - 30	%	ISO 815
Bayshore Resilience	25 - 45	%	ASTM D2632
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength (23°C)	-29 - 7.0	%	ASTM D471, ISO 1817
Change in Volume (23°C)	0.60 - 24	%	ASTM D471
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-67.8 - -12.8	°C	ASTM D746
Glass Transition Temperature			
--	-50.0 - 0.00	°C	ASTM E1356
--	-45.1 - -14.5	°C	DSC
Vicat Softening Temperature			
--	57.8 - 160	°C	ASTM D1525
--	38.9 - 155	°C	ISO 306
Melting Temperature			
--	68.0 - 215	°C	
--	106 - 227	°C	DSC
CLTE - Flow	9.3E-5 - 2.0E-4	cm/cm/°C	ASTM D696
Electrical	Nominal Value	Unit	Test Method

Surface Resistivity	1.0E+6 - 2.5E+10	ohms	ASTM D257
Injection	Nominal Value	Unit	
Drying Temperature	79.8 - 110	°C	
Drying Time	2.0 - 4.1	hr	
Dew Point	-30.6 - -30.0	°C	
Suggested Max Moisture	0.069 - 0.070	%	
Hopper Temperature	29.4 - 33.1	°C	
Rear Temperature	184 - 201	°C	
Middle Temperature	184 - 211	°C	
Front Temperature	185 - 211	°C	
Nozzle Temperature	189 - 216	°C	
Processing (Melt) Temp	181 - 230	°C	
Mold Temperature	29.2 - 46.3	°C	
Injection Pressure	6.00 - 86.3	MPa	
Holding Pressure	3.00 - 4.23	MPa	
Back Pressure	0.165 - 0.834	MPa	
Screw Speed	49 - 130	rpm	
Clamp Tonnage	5.5 - 5.6	kN/cm ²	

Injection instructions

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Extrusion	Nominal Value	Unit	
Drying Temperature	78.3 - 107	°C	
Drying Time	1.5 - 4.0	hr	
Suggested Max Moisture	0.020 - 0.070	%	
Hopper Temperature	32.5 - 36.2	°C	
Cylinder Zone 1 Temp.	172 - 179	°C	
Cylinder Zone 2 Temp.	177 - 185	°C	
Cylinder Zone 3 Temp.	177 - 193	°C	
Cylinder Zone 4 Temp.	176 - 201	°C	
Cylinder Zone 5 Temp.	169 - 183	°C	
Adapter Temperature	184 - 189	°C	
Melt Temperature	189 - 217	°C	
Die Temperature	186 - 191	°C	

Extrusion instructions

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NOTE

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

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