

Generic TPO (POE)

Thermoplastic Polyolefin Elastomer

Generic

Message:

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General Information			
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	0.857 - 1.05	g/cm³	ASTM D792
23°C	0.880 - 0.985	g/cm³	ISO 1183
--	0.862 - 0.887	g/cm³	ASTM D1505
Melt Mass-Flow Rate (MFR)			
230°C/2.16 kg	0.090 - 20	g/10 min	ASTM D1238
230°C/2.16 kg	0.50 - 23	g/10 min	ISO 1133
Molding Shrinkage			
Flow: 23°C	1.2 - 2.5	%	ASTM D955
23°C	0.40 - 1.6	%	ISO 294-4
Mooney Viscosity	2 - 38	MU	ASTM D1646
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			
23°C	11 - 96		ASTM D2240
23°C	32 - 99		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	1.21 - 34.9	MPa	ASTM D638
Tensile Strength			
Yield, 23°C	4.20 - 230	MPa	ASTM D638
Yield, 23°C	9.90 - 21.1	MPa	ISO 527-2
Fracture, 23°C	1.30 - 27.9	MPa	ASTM D638
23°C	0.900 - 21.0	MPa	ASTM D638
Tensile Elongation			
Yield, 23°C	5.0 - 300	%	ASTM D638
Yield, 23°C	6.9 - 15	%	ISO 527-2
Fracture, 23°C	10 - 1000	%	ASTM D638
Fracture, 23°C	490 - 510	%	ISO 527-2
Flexural Modulus			
23°C	1.20 - 626	MPa	ASTM D790
23°C	20.0 - 2850	MPa	ISO 178
Elastomers	Nominal Value	Unit	Test Method

Tensile Stress			
100% strain, 23°C	1.24 - 6.99	MPa	ASTM D412
100% strain, 23°C	1.70 - 11.3	MPa	ISO 37
300% strain, 23°C	3.03 - 12.6	MPa	ASTM D412
Tensile Strength			
Yield, 23°C	3.62 - 12.4	MPa	ASTM D412
Fracture, 23°C	2.40 - 21.3	MPa	ASTM D412
Fracture, 23°C	8.45 - 15.4	MPa	ISO 37
Tensile Elongation			
Yield	200 - 500	%	ASTM D412
Fracture, 23°C	240 - 810	%	ASTM D412
Fracture, 23°C	520 - 880	%	ISO 37
Tear Strength			
23°C	14.3 - 113	kN/m	ASTM D624
23°C	80 - 120	kN/m	ISO 34-1
Compression Set	15 - 79	%	ASTM D395
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			
23°C	3.5 - 40	J/m	ASTM D256
23°C	23 - 61	kJ/m ²	ISO 180
Instrumented Dart Impact (23°C)	16.0 - 19.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	12.2 - 136	°C	ASTM D648
0.45 MPa, not annealed	53.0 - 106	°C	ISO 75-2/B
1.8 MPa, not annealed	37.0 - 57.3	°C	ISO 75-2/A
Brittleness Temperature			
--	-75.0 - -19.0	°C	ASTM D746
--	-60.0	°C	ISO 812
Glass Transition Temperature			
--	-58.3 - -54.8	°C	ASTM E1356
--	-59.2 - -30.2	°C	DSC
Vicat Softening Temperature	34.4 - 97.6	°C	ASTM D1525
Melting Temperature (DSC)	34.0 - 106	°C	ISO 3146
Peak Crystallization Temperature (DSC)	13.0 - 90.0	°C	ASTM D3418
CLTE - Flow			
--	4.8E-5 - 1.0E-4	cm/cm/°C	ASTM E228
--	4.0E-5 - 1.0E-4	cm/cm/°C	ISO 11359-2
RTI Elec	105 - 115	°C	UL 746
RTI Imp	105 - 115	°C	UL 746
RTI	105 - 115	°C	UL 746
Electrical	Nominal Value	Unit	Test Method

Surface Resistivity	1.0E+5 - 2.5E+10	ohms	ASTM D257
Volume Resistivity (23°C)	1.0E+2 - 2.5E+14	ohms·cm	ASTM D257
Dielectric Constant (23°C)	2.10 - 2.43		ASTM D150
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	25 - 32	%	ASTM D2863
Injection	Nominal Value	Unit	
Drying Temperature	79.3 - 79.6	°C	
Drying Time	1.9 - 3.5	hr	
Rear Temperature	159 - 206	°C	
Middle Temperature	169 - 216	°C	
Front Temperature	179 - 215	°C	
Nozzle Temperature	189 - 211	°C	
Processing (Melt) Temp	196 - 222	°C	
Mold Temperature	34.9 - 46.1	°C	
Injection Pressure	4.14 - 104	MPa	
Back Pressure	0.259 - 1.36	MPa	
Screw Speed	53 - 150	rpm	
Cushion	14.5 - 14.6	mm	

Injection instructions

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Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	165 - 178	°C
Cylinder Zone 2 Temp.	175 - 182	°C
Cylinder Zone 3 Temp.	180 - 188	°C
Cylinder Zone 4 Temp.	185 - 186	°C
Cylinder Zone 5 Temp.	193 - 212	°C
Melt Temperature	195 - 205	°C
Die Temperature	200 - 232	°C

Extrusion instructions

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