

PRE-ELEC® TP 11270

High Density Polyethylene

Premix Oy

Message:

PRE-ELEC® TP 11270 is a conductive thermoplastic compound based on PE-HD. The electrical conductivity is achieved by using special conductive carbon black. In addition to a low electrical resistivity, PRE-ELEC® TP 11270 has an excellent balance of mechanical properties and is easy injection mould or extrude.

Typical applications include automotive fuel system parts; extruded fuel filler pipes and injection moulded fuel filler necks and heads.

General Information			
Additive	Carbon black		
Features	Conductivity		
	High density		
	Workability, good		
Uses	Application in Automobile Field		
	Fuel line		
Forms	Particles		
Processing Method	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.05	g/cm ³	ASTM D792
--	1.03	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/21.6 kg)	15	g/10 min	ASTM D1238, ISO 1133
Molding Shrinkage			
Flow	2.5 - 3.5	%	ASTM D955
Flow direction	2.5 - 3.5	%	ISO 294-4
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240, ISO 868
Shaw A	97		ASTM D2240, ISO 868
Shaw D	70		ASTM D2240, ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			
Transverse flow: Yield	24.8	MPa	ASTM D638
Flow: Yield	24.8	MPa	ASTM D638
Transverse flow: Yield	25.0	MPa	ISO 527-2
Flow: Yield	25.0	MPa	ISO 527-2

Across Flow	26.2	MPa	ASTM D638
Flow	46.2	MPa	ASTM D638
4.00 mm ¹	27.0	MPa	ISO 527-2
4.00 mm ²	46.0	MPa	ISO 527-2
Tensile Elongation			
Transverse flow: Yield	8.0	%	ASTM D638, ISO 527-2
Flow: Yield	26	%	ASTM D638, ISO 527-2
Transverse flow: Fracture	> 600	%	ASTM D638
Flow: Fracture	> 600	%	ASTM D638
Fracture, 0.400mm ³	> 600	%	ISO 527-2
Fracture, 4.00mm ⁴	> 600	%	ISO 527-2
Flexural Modulus (4.00 mm)	1200	MPa	ASTM D790, ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁵			
-20°C	4.2	kJ/m ²	ASTM D256
-20°C	4.0	kJ/m ²	ISO 179
23°C	12	kJ/m ²	ISO 179
23°C	13	kJ/m ²	ASTM D256
Charpy Unnotched Impact Strength ⁶			
-20°C	No Break		ASTM D256, ISO 179
23°C	No Break		ISO 179, ASTM D256
Notched Izod Impact			ASTM D256
-20°C, 4.00 mm	4.20	kJ/m ²	ASTM D256
23°C, 4.00 mm	12.6	kJ/m ²	ASTM D256
Notched Izod Impact ⁷			ISO 180
-20°C	5.0	kJ/m ²	ISO 180
23°C	13	kJ/m ²	ISO 180
Unnotched Izod Impact			ASTM D256
-20°C, 4.00 mm	No Break		ASTM D256
23°C, 4.00 mm	No Break		ASTM D256
Unnotched Izod Impact Strength ⁸			ISO 180
-20°C	No Break		ISO 180
23°C	No Break		ISO 180
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	82.2	°C	ASTM D648B
0.45 MPa, not annealed	76.0	°C	ISO 75-2/Bf
1.8 MPa, not annealed	47.8	°C	ASTM D648A
1.8 MPa, not annealed	45.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	60.0	°C	ASTM D1525 ⁹

--	127	°C	ASTM D1525, ISO 306/A50 6 ¹⁰
--	87.0	°C	ISO 306/B50
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	< 1.0E+5	ohms	ESD STM11.11, IEC 61340-2-3
Volume Resistivity	< 1.0E+4	ohms·cm	Internal method
Injection	Nominal Value	Unit	
Drying Temperature	60.0 - 80.0	°C	
Drying Time	2.0 - 4.0	hr	
Processing (Melt) Temp	230 - 280	°C	
Mold Temperature	40.0 - 80.0	°C	
Injection Pressure	60.0 - 80.0	MPa	
Injection Rate	Moderate		
Extrusion	Nominal Value	Unit	
Drying Temperature	60.0 - 80.0	°C	
Drying Time	2.0 - 4.0	hr	
Cylinder Zone 1 Temp.	200	°C	
Cylinder Zone 2 Temp.	210	°C	
Cylinder Zone 3 Temp.	220	°C	
Cylinder Zone 4 Temp.	220	°C	
Cylinder Zone 5 Temp.	230	°C	
Extrusion instructions			
Cylinder Zone 6: 230°C			
NOTE			
1.	Across Flow		
2.	Flow		
3.	Across Flow		
4.	Flow		
5.	4 mm thickness		
6.	4 mm thickness		
7.	4 mm thickness		
8.	4 mm thickness		
9.	标准 B (120°C/h), 载荷2 (50N)		
10.	速率 A (50°C/h), 载荷2 (50N)		

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