

PRE-ELEC® PP 1380

Compounded Polypropylene

Premix Oy

Message:

PRE-ELEC® PP 1380 is a conductive thermoplastic compound based on polypropylene. Conductivity is achieved by using special conductive carbon black. In addition to a very low electrical resistivity, PRE-ELEC® PP 1380 has an excellent balance of mechanical properties and it is easy to process. Typical applications include injection moulded parts for the automotive, medical and electronics industries where a very low volume resistivity is needed.

General Information			
Additive	Carbon Black		
Features	Conductive		
	Good Processability		
Uses	Automotive Applications		
	Electrical/Electronic Applications		
	Medical/Healthcare Applications		
Forms	Granules		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.05	g/cm ³	ASTM D792
--	1.06	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (230°C/5.0 kg)	1.5	g/10 min	ASTM D1238, ISO 1133
Molding Shrinkage - Flow	1.2 to 1.7	%	ASTM D955, ISO 294-4
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240, ISO 868
Shore A	97		
Shore D	72		
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			
--	26.2	MPa	ASTM D638
4.00 mm	26.0	MPa	ISO 527-2
Tensile Strain (Break, 4.00 mm)	5.0	%	ISO 527-2
Flexural Modulus			
4.00 mm	1930	MPa	ASTM D790
4.00 mm	1900	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹			
-20°C	2.1	kJ/m ²	ASTM D256
-20°C	3.0	kJ/m ²	ISO 179

23°C	8.0	kJ/m ²	ISO 179
23°C	6.3	kJ/m ²	ASTM D256
Charpy Unnotched Impact Strength ²			
-20°C	63	kJ/m ²	ASTM D256
-20°C	61	kJ/m ²	ISO 179
23°C	No Break		ISO 179, ASTM D256
Notched Izod Impact (Area)			ASTM D256
-20°C, 4.00 mm	2.10	kJ/m ²	
23°C, 4.00 mm	2.10	kJ/m ²	
Notched Izod Impact Strength ³			ISO 180
-20°C	2.0	kJ/m ²	
23°C	3.0	kJ/m ²	
Unnotched Izod Impact (Area)			ASTM D256
-20°C, 4.00 mm	12.6	kJ/m ²	
23°C, 4.00 mm	48.3	kJ/m ²	
Unnotched Izod Impact Strength ⁴			ISO 180
-20°C	13	kJ/m ²	
23°C	49	kJ/m ²	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	104	°C	ASTM D648B, ISO 75-2/Bf
1.8 MPa, Unannealed	57.8	°C	ASTM D648A
1.8 MPa, Unannealed	58.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	150	°C	ASTM D1525, ISO 306/A50 3 ⁵
--	80.0	°C	ASTM D1525, ISO 306/B50 4 ⁶
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	< 1.0E+2	ohms	ESD STM11.11, IEC 61340-2-3
Volume Resistivity	< 5.0	ohms · cm	Internal Method
Injection	Nominal Value	Unit	
Drying Temperature	90.0	°C	
Drying Time	2.0	hr	
Processing (Melt) Temp	200 to 260	°C	
Mold Temperature	60.0 to 80.0	°C	
Injection Pressure	60.0 to 80.0	MPa	
Injection Rate	Moderate		
NOTE			
1.	4 mm thickness		
2.	4 mm thickness		
3.	4 mm thickness		

4.	4 mm thickness
5.	Rate A (50°C/h), Loading 2 (50 N)
6.	Rate B (120°C/h), Loading 2 (50 N)

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