

PRE-ELEC® PE 1291

High Density Polyethylene

Premix Oy

Message:

PRE-ELEC® PE 1291 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® PE 1291 has an excellent balance of mechanical properties and is easy to extrude. Typical applications include blow moulded bottles, containers and canisters or mono- or co-extruded pipes and sheets.

General Information	
Additive	Carbon black
Features	Conductivity
	High density
	Workability, good
Uses	Piping system
	Sheet
	Bottle
	Container
Forms	Particles
Processing Method	Blow molding
	Extrusion

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.05	g/cm ³	ASTM D792
--	1.04	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR)			ISO 1133
190°C/10.0 kg	0.70	g/10 min	ISO 1133
190°C/21.6 kg	6.0	g/10 min	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 (Shore A)	97		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			
Flow: Yield	24.8	MPa	ASTM D638
Flow: Yield	25.0	MPa	ISO 527-2
Flow	26.2	MPa	ASTM D638
0.400 mm ¹	26.0	MPa	ISO 527-2

Tensile Strain			ISO 527-2
Transverse flow: Yield	9.0	%	ISO 527-2
Flow: Yield	14	%	ISO 527-2
Fracture, 4.00mm ²	> 500	%	ISO 527-2
Fracture, 4.00mm ³	> 650	%	ISO 527-2
Flexural Modulus (4.00 mm)	1200	MPa	ASTM D790, ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁴			
-20°C	23	kJ/m ²	ASTM D256, ISO 179
23°C	40	kJ/m ²	ISO 179, ASTM D256
Charpy Unnotched Impact Strength ⁵			
-20°C	No Break		ASTM D256, ISO 179
2°C	No Break		ISO 179
23°C	No Break		ASTM D256
Notched Izod Impact			ASTM D256
-20°C, 4.00 mm	21.0	kJ/m ²	ASTM D256
23°C, 4.00 mm	44.1	kJ/m ²	ASTM D256
Notched Izod Impact ⁶			ISO 180
-20°C	20	kJ/m ²	ISO 180
23°C	45	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 ⁷			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	82.0	°C	ISO 75-2/Bf
1.8 MPa, not annealed	47.8	°C	ASTM D648A
1.8 MPa, not annealed	48.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	60.0	°C	ASTM D1525, ISO 306/B50 6 ⁸
--	126	°C	ASTM D1525, ISO 306/A50 7 ⁹
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	< 1.0E+5	ohms	IEC 61340-2-3
Volume Resistivity	< 1.0E+4	ohms · cm	Internal method
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.	Flow
2.	Across Flow
3.	Flow
4.	4 mm thickness
5.	4 mm thickness
6.	4 mm thick
7.	4 mm thickness
8.	标准 B (120°C/h), 载荷2 (50N)
9.	速率 A (50°C/h), 载荷2 (50N)

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