

PRE-ELEC® PE 1294

High Density Polyethylene

Premix Oy

Message:

PRE-ELEC® PE 1294 is a conductive thermoplastic compound based on PE-HD. Conductivity is achieved by using special conductive carbon black. In addition to a low electrical resistivity. PRE-ELEC® PE 1294 has an excellent balance of mechanical properties and is easy to injection mould. Typical applications include large plastic parts like pallets, drums and containers.

General Information			
Additive	Carbon Black		
Features	Conductive		
	Good Processability		
	High Density		
Uses	Containers		
	Drums		
Forms	Granules		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	0.996	g/cm ³	ASTM D792
--	1.01	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR)			ASTM D1238, ISO 1133
190°C/10.0 kg	20	g/10 min	
190°C/2.16 kg	2.0	g/10 min	
190°C/21.6 kg	80	g/10 min	
Molding Shrinkage - Flow	1.5 to 2.5	%	ASTM D955, ISO 294-4
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240, ISO 868
Shore A	95		
Shore D	66		
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			
Yield	23.0	MPa	ASTM D638, ISO 527-2
--	12.0	MPa	ASTM D638
4.00 mm	12.0	MPa	ISO 527-2
Tensile Elongation			
Yield	15	%	ASTM D638, ISO 527-2
Break	300	%	ASTM D638
Break, 4.00 mm	300	%	ISO 527-2

Flexural Modulus (4.00 mm)	1000	MPa	ASTM D790, ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹			
-20°C	8.4	kJ/m ²	ASTM D256
-20°C	10	kJ/m ²	ISO 179
23°C	15	kJ/m ²	ISO 179, ASTM D256
Charpy Unnotched Impact Strength ²			
-20°C	No Break		ASTM D256, ISO 179
23°C	No Break		ISO 179, ASTM D256
Notched Izod Impact (Area)			ASTM D256
-20°C, 4.00 mm	4.20	kJ/m ²	
23°C, 4.00 mm	12.6	kJ/m ²	
Notched Izod Impact Strength ³			ISO 180
-20°C	4.0	kJ/m ²	
23°C	12	kJ/m ²	
Unnotched Izod Impact (Area)			ASTM D256
-20°C, 4.00 mm	No Break		
23°C, 4.00 mm	No Break		
Unnotched Izod Impact Strength ⁴			ISO 180
-20°C	No Break		
23°C	No Break		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	76.1	°C	ASTM D648B
0.45 MPa, Unannealed	76.0	°C	ISO 75-2/Bf
1.8 MPa, Unannealed	45.0	°C	ASTM D648A, ISO 75-2/Af
Vicat Softening Temperature			
--	125	°C	ASTM D1525, ISO 306/A50 3 ⁵
--	62.8	°C	ASTM D1525 ⁶
--	63.0	°C	ISO 306/B50
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity			ESD STM11.11, IEC 61340-2-3
Volume Resistivity			Internal Method
Injection	Nominal Value	Unit	
Drying Temperature	60.0 to 80.0	°C	
Drying Time	2.0 to 4.0	hr	
Processing (Melt) Temp	180 to 250	°C	
Mold Temperature	40.0 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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