

PRE-ELEC® PC 1431

Polycarbonate

Premix Oy

Message:

PRE-ELEC® PC 1431 is a conductive thermoplastic compound based on polycarbonate. Conductivity is achieved by using special conductive carbon black. In addition to a low electrical resistivity, PRE-ELEC® PC 1431 has excellent mechanical properties and is easy to injection mould. Typical applications include technical parts requiring good impact strength, higher rigidity and very good temperature resistance.

General Information			
Additive	Carbon Black		
Features	Conductive		
	Good Impact Resistance		
	Good Processability		
	Good Thermal Stability		
	High Rigidity		
Forms	Granules		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.25	g/cm ³	ASTM D792
--	1.24	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR)			ISO 1133
300°C/1.2 kg	4.0	g/10 min	
300°C/2.16 kg	10	g/10 min	
Molding Shrinkage - Flow	0.60	%	ASTM D955, ISO 294-4
Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore D)	85		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			
Across Flow : Yield	44.8	MPa	ASTM D638
Flow : Yield	50.3	MPa	ASTM D638
Across Flow : Yield	45.0	MPa	ISO 527-2
Flow : Yield	50.0	MPa	ISO 527-2
Across Flow	44.1	MPa	ASTM D638
Flow	46.9	MPa	ASTM D638
-- ¹	44.0	MPa	ISO 527-2
0.400 mm ²	47.0	MPa	ISO 527-2
Tensile Strain			ISO 527-2
Across Flow : Yield	6.0	%	
Flow : Yield	6.0	%	

Break, 0.400 mm ³	15	%	
Break, 0.400 mm ⁴	20	%	
Flexural Modulus			
4.00 mm	2480	MPa	ASTM D790
4.00 mm	2500	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁵			
-20°C	15	kJ/m ²	ASTM D256
-20°C	16	kJ/m ²	ISO 179
23°C	22	kJ/m ²	ISO 179
23°C	21	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 (Area)			ASTM D256
-20°C, 4.00 mm	14.7	kJ/m ²	
23°C, 4.00 mm	21.0	kJ/m ²	
Notched Izod Impact Strength ⁷			ISO 180
-20°C	14	kJ/m ²	
23°C	20	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 ⁸			ISO 180
-20°C	No Break		
23°C	No Break		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	138	°C	ASTM D648B, ISO 75-2/Bf
1.8 MPa, Unannealed	125	°C	ASTM D648A, ISO 75-2/Af
Vicat Softening Temperature			
--	147	°C	ASTM D1525, ISO 306/A50 6 ⁹
--	140	°C	ASTM D1525, ISO 306/B50 7 ¹⁰
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	< 1.0E+6	ohms	IEC 61340-2-3
Volume Resistivity	< 1.0E+4	ohms · cm	Internal Method
Injection	Nominal Value	Unit	
Drying Temperature	100 to 120	°C	
Drying Time	2.0 to 4.0	hr	
Processing (Melt) Temp	270 to 290	°C	
Mold Temperature	90.0 to 110	°C	

Injection Pressure	100 to 152	MPa
Injection Rate	Moderate	
NOTE		
1.	.4 mm Thickness, 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.	Rate A (50°C/h), Loading 2 (50 N)	
10.	Rate B (120°C/h), Loading 2 (50 N)	

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