

RALUPOL® UP 5000

Thermoset Polyester

RASCHIG GmbH

Message:

Glass-fibre reinforced Polyester moulding compound

Low mould shrinkage and post-shrinkage, very good electrical values, excellent heat resistance, good mechanical strength

Primary application(s): Commutators

This product meets the allowed upper limits for heavy metals and PCAs and also conforms to the requirements of the EU directives 2002/95 (RoHS), 2002/96 (WEEE) and 2006/122 (PFOS)

General Information	
Filler / Reinforcement	Glass Fiber
Features	Good Electrical Properties
	Good Strength
	High Heat Resistance
	Low Shrinkage
Uses	Electrical Parts
Agency Ratings	EU 2002/96/EC (WEEE)
	EU 2006/122/EC
RoHS Compliance	RoHS Compliant
Appearance	Natural Color
Forms	Granules
Processing Method	Compression Molding
	Resin Transfer Molding

Physical	Nominal Value	Unit	Test Method
Density	1.95 to 2.15	g/cm ³	ISO 1183
Apparent Density	0.80 to 1.00	g/cm ³	ISO 60
Molding Shrinkage - Flow ¹	0.20 to 0.30	%	ISO 2577
Water Absorption (23°C, 24 hr)	< 0.50	%	ISO 62
Post Shrinkage ²	< 0.10	%	ISO 2577
Compression Molding Molding Pressure	> 10.0	MPa	
Compression Molding Temperature	165 to 180	°C	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (Compression Molded)	9000 to 11000	MPa	ISO 527-2
Tensile Stress (Compression Molded)	35.0 to 60.0	MPa	ISO 527-2
Flexural Modulus (Compression Molded)	12000 to 15000	MPa	ISO 178
Flexural Stress (Compression Molded)	85.0 to 130	MPa	ISO 178
Compressive Stress	150 to 200	MPa	ISO 604

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (Compression Molded)	2.5 to 3.5	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (Compression Molded)	4.0 to 6.0	kJ/m ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (8.0 MPa, Unannealed)	180 to 200	°C	ISO 75-2/C
CLTE - Flow (50 to 100°C)	1.0E-5 to 2.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.60 to 0.70	W/m/K	ASTM E1461
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+11 to 1.0E+12	ohms	IEC 60093
Volume Resistivity	> 1.0E+13	ohms·cm	IEC 60093
Electric Strength	25 to 35	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
	6.00		
100 Hz	5.00		
	5.00		
1 MHz	4.00		
Dissipation Factor			IEC 60250
100 Hz	0.010 to 0.030		
1 MHz	0.010 to 0.030		
Arc Resistance	PLC 4		ASTM D495
Comparative Tracking Index	> 600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.60 mm, Tested by RASCHIG)	HB		UL 94
Injection	Nominal Value	Unit	
Middle Temperature	50.0 to 70.0	°C	
Front Temperature	80.0 to 100	°C	
Processing (Melt) Temp	100 to 115	°C	
Mold Temperature	165 to 180	°C	
Back Pressure	1.00 to 1.50	MPa	
Screw Speed	70 to 100	rpm	
NOTE			
1.	Compression Molded		
2.	168 h / 110°C		

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