

RALUPOL® UP 2100

Thermoset Polyester

RASCHIG GmbH

Message:

Organically and inorganically filled Polyester moulding compound

Low post-shrinkage, very good electrical values, good mechanical strength

Primary application(s): Safety cut outs, Contactors, Switches

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	Organic\Inorganic
Features	Good Electrical Properties
	Good Strength
	Low Shrinkage
Uses	Electrical Parts
	Switches
Agency Ratings	EU 2002/96/EC (WEEE)
	EU 2006/122/EC
RoHS Compliance	RoHS Compliant
Forms	Granules
Processing Method	Compression Molding
	Injection Molding

Physical	Nominal Value	Unit	Test Method
Density	1.65 to 1.85	g/cm ³	ISO 1183
Apparent Density	0.75 to 1.00	g/cm ³	ISO 60
Molding Shrinkage - Flow			ISO 2577
-- ¹	0.80 to 1.1	%	
-- ²	0.70 to 1.0	%	
Water Absorption (23°C, 24 hr)	< 1.2	%	ISO 62
Post Shrinkage ³	0.20 to 0.40	%	ISO 2577
Maximum Service Temperature			IEC 60216
<50 h	190	°C	
20,000 h	130	°C	
Compression Molding Molding Pressure	> 10.0	MPa	
Compression Molding Temperature	165 to 180	°C	
Mechanical	Nominal Value	Unit	Test Method

Tensile Modulus			ISO 527-2
Compression Molded	4000 to 6000	MPa	
Injection Molded	5000 to 8000	MPa	
Tensile Stress			ISO 527-2
Compression Molded	25.0 to 40.0	MPa	
Injection Molded	40.0 to 50.0	MPa	
Flexural Modulus			ISO 178
Compression Molded	6000 to 9000	MPa	
Injection Molded	7000 to 10000	MPa	
Flexural Stress			ISO 178
Compression Molded	50.0 to 80.0	MPa	
Injection Molded	80.0 to 120	MPa	
Compressive Stress	150 to 200	MPa	ISO 604
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
Compression Molded	1.0 to 2.0	kJ/m ²	
Injection Molded	1.5 to 2.5	kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
Compression Molded	5.0 to 8.0	kJ/m ²	
Injection Molded	6.0 to 10	kJ/m ²	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
1.8 MPa, Unannealed	> 180	°C	ISO 75-2/A
8.0 MPa, Unannealed	80.0 to 120	°C	ISO 75-2/C
CLTE - Flow (50 to 100°C)	2.5E-5 to 4.5E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.90 to 1.0	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+12 to 1.0E+13	ohms · cm	IEC 60093
Electric Strength	20 to 30	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
	7.00		
100 Hz	5.00		
	6.00		
1 MHz	4.00		
Dissipation Factor			IEC 60250
100 Hz	0.60 to 0.80		

1 MHz	0.030 to 0.050		
Arc Resistance	PLC 4		ASTM D495
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating (3.00 mm)	V-0		UL 94
Glow Wire Flammability Index	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	850	°C	IEC 60695-2-13
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.	Injection Molded		
3.	168 h / 110°C		

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