## RALUPOL® UP 2200

## Thermoset Polyester

## RASCHIG GmbH

## Message:

Organically filled Polyester moulding compound

Low post-shrinkage, good electrical and mechanical properties, high surface quality and good colour stability (non-yellowing) Primary application(s): Oven fittings

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		
Features	Good Color Stability		
	Good Electrical Properties		
	Good Surface Finish		
	Low Shrinkage		
Uses	Appliance Components		
Agency Ratings	EU 2002/96/EC (WEEE)		
	EU 2006/122/EC		
RoHS Compliance	RoHS Compliant		
Forms	Granules		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Density	1.70 to 1.90	g/cm³	ISO 1183
Apparent Density	0.75 to 1.00	g/cm³	ISO 60
Molding Shrinkage - Flow <sup>1</sup>	0.70 to 1.0	%	ISO 2577
Water Absorption (23°C, 24 hr)	< 2.0	%	ISO 62
Post Shrinkage <sup>2</sup>	0.10 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 (Injection Molded)	5000 to 8000	MPa	ISO 527-2
Tensile Stress (Injection Molded)	50.0 to 70.0	MPa	ISO 527-2
Flexural Modulus (Injection Molded)	8000 to 10000	MPa	ISO 178
Flexural Stress (Injection Molded)	90.0 to 120	MPa	ISO 178
Compressive Stress	150 to 200	MPa	ISO 604

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (Injection Molded)	2.0 to 3.0	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (Injection Molded)	7.0 to 12	kJ/m²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
1.8 MPa, Unannealed	> 110	°C	ISO 75-2/A
8.0 MPa, Unannealed	70.0 to 120	°C	ISO 75-2/C
CLTE - Flow (50 to 100°C)	1.5E-5 to 2.5E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.50 to 0.60	W/m/K	ASTM E1461
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+10 to 1.0E+11	ohms	IEC 60093
Volume Resistivity	1.0E+11 to 1.0E+12	ohms·cm	IEC 60093
Electric Strength	20 to 30	kV/mm	IEC 60243-1
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)	НВ		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.	Injection Molded		
2.	168 h / 110°C		

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