Solvay Specialty Polymers Amodel® FR-4133 Polyphthalamide (PPA) Resin, 33% Glass Reinforced, Dry as Molded (d

Category : Polymer , Thermoplastic , Polyphthalamide (PPA) , Polyphthalamide (PPA), 30% Glass Fiber Reinforced

Material Notes:

AMODEL FR-4133 is a 33% glass-reinforced polyphthalamide (PPA) resin designed for electrical and electronic applications. This UL94-V0 resin offers the highest mechanical and electrical properties, plus superior thermal performance to resist blistering during lead-free SMT processes. Color stability is enhanced compared to previous flame-retarded grades. Quick crystallization in water-cooled molds allows for fast cycle times using mold temperatures as low as 150°F (65°C).Information provided by Solvay Advanced Polymers

Order this product through the following link:
http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Amodel-FR-4133-Polyphthalamide-PPA-Resin-33-Glass-Reinforced-Dry-as-Molded-nbspd.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.68 g/cc	1.68 g/cc	ASTM D792
	1.68 g/cc	1.68 g/cc	ISO 1183A
Moisture Absorption at Equilibrium	0.10 %	0.10 %	24 hours; ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	125	125	ASTM D785
Tensile Strength, Yield	191 MPa	27700 psi	ISO 527
	199 MPa	28900 psi	ASTM D638
	72.0 MPa @Temperature 175 °C	10400 psi @Temperature 347 °F	ISO 527
	89.0 MPa @Temperature 150 °C	12900 psi @Temperature 302 °F	ISO 527
	119 MPa @Temperature 100 °C	17300 psi @Temperature 212 °F	ISO 527
Elongation at Break	1.8 %	1.8 %	ISO 527
	2.2 % @Temperature 100 °C	2.2 % @Temperature 212 °F	ISO 527
	3.1 % @Temperature 150 °C	3.1 % @Temperature 302 °F	ISO 527
	4.6 %	4.6 %	ISO 527

Mechanical Properties	Metric	English	Comments
	@Temperature 175 °C	@Temperature 347 °F	
Elongation at Yield	1.8 %	1.8 %	ASTM D638
Tensile Modulus	14.7 GPa	2130 ksi	ISO 527
	15.7 GPa	2280 ksi	ASTM D638
	5.80 GPa @Temperature 175 °C	841 ksi @Temperature 347 °F	ISO 527
	7.00 GPa @Temperature 150 °C	1020 ksi @Temperature 302 °F	ISO 527
	10.4 GPa @Temperature 100 °C	1510 ksi @Temperature 212 °F	ISO 527
Flexural Strength	266 MPa	38600 psi	ISO 178
	267 MPa	38700 psi	ASTM D790
	101 MPa @Temperature 175 °C	14600 psi @Temperature 347 °F	ISO 178
	127 MPa @Temperature 150 °C	18400 psi @Temperature 302 °F	ISO 178
	173 MPa @Temperature 100 °C	25100 psi @Temperature 212 °F	ISO 178
Flexural Modulus	12.3 GPa	1780 ksi	ISO 178
	12.8 GPa	1860 ksi	ASTM D790
	5.00 GPa @Temperature 175 °C	725 ksi @Temperature 347 °F	ISO 178
	6.50 GPa @Temperature 150 °C	943 ksi @Temperature 302 °F	ISO 178
	9.40 GPa @Temperature 100 °C	1360 ksi @Temperature 212 °F	ISO 178
Compressive Strength	156 MPa	22600 psi	ASTM D695
Shear Strength	83.0 MPa	12000 psi	ASTM D732
Izod Impact, Notched	0.850 J/cm	1.59 ft-lb/in	ASTM D256
Izod Impact, Unnotched	6.41 J/cm	12.0 ft-lb/in	ASTM D4812

Mechanical Properties	Metric	English	Comments
Izod Impact, Notched (ISO)	5.0 kJ/m²	2.38 ft-lb/in²	ISO 180/1A
Izod Impact, Unnotched (ISO)	50.0 kJ/m²	23.8 ft-lb/in²	ISO 180/1U
Charpy Impact Unnotched	9.70 J/cm²	46.2 ft-lb/in²	ISO 179/1eU
Charpy Impact, Notched	1.40 J/cm²	6.66 ft-lb/in²	ISO 179/1eA

Thermal Properties	Metric	English	Comments
Melting Point	326 °C	619 °F	ASTM D3418
	326 °C	619 °F	ISO 11357-3
Deflection Temperature at 1.8 MPa (264 psi)	301 °C	574 °F	ASTM D648
	307 °C	585 °F	ISO 75Af
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	ASTM D257
Surface Resistance	2.00e+16 ohm	2.00e+16 ohm	ASTM D257
Dielectric Strength	20.0 kV/mm @Thickness 1.57 mm	508 kV/in @Thickness 0.0620 in	ASTM D149
	30.0 kV/mm @Thickness 0.787 mm	762 kV/in @Thickness 0.0310 in	ASTM D149
Comparative Tracking Index	>= 600 V	>= 600 V	
Hot Wire Ignition, HWI	>= 120 sec	>= 120 sec	UL 746A
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	UL 746A

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