

Solvay Specialty Polymers Amodel® AE-4133 Polyphthalamide (PPA), 33% Glass Fiber (Dry)

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

Material Notes:

Amodel® AE-4133 is a 33% glass reinforced, hot-water moldable polyphthalamide (PPA) designed to work in the modern automotive electrical environment. Features: Good Chemical Resistance; Good Creep Resistance; Good Dimensional Stability; Good Stiffness; High Heat Resistance; High Stiffness; High Strength; High Temperature Strength; Low Moisture Absorption. Uses: Automotive Electronics; Connectors; Electrical Parts; Electrical/Electronic Applications. Injection Molding Notes: Amodel® compounds are shipped in moisture-resistant packages at moisture levels according to specifications. Sealed, undamaged bags should be preferably stored in a dry room at a maximum temperature of 50°C (122°F) and should be protected from possible damage. If only a portion of a package is used, the remaining material should be transferred into a sealable container. It is recommended that Amodel® resins be dried prior to molding. Additional Properties: Flexural Strain - ISO 178 3.1 % Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Amodel-AE-4133-Polyphthalamide-PPA-33-Glass-Fiber-Dry.php

Physical Properties	Metric	English	Comments
Density	1.45 g/cc	0.0524 lb/in ³	ISO 1183
Filler Content	33 %	33 %	Glass Fiber
Water Absorption	0.23 % @Time 86400 sec	0.23 % @Time 24.0 hour	ISO 62
Linear Mold Shrinkage, Flow	0.0040 cm/cm	0.0040 in/in	
Linear Mold Shrinkage, Transverse	0.0080 cm/cm	0.0080 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	210 MPa	30500 psi	ISO 527-2
Elongation at Break	2.5 %	2.5 %	ISO 527-2
Tensile Modulus	12.0 GPa	1740 ksi	ISO 527-2
Flexural Strength	295 MPa	42800 psi	ISO 178
Flexural Modulus	10.7 GPa	1550 ksi	ISO 178
Izod Impact, Notched (ISO)	9.20 kJ/m ²	4.38 ft-lb/in ²	Type 1, Notch A; ISO 180
Izod Impact, Unnotched (ISO)	68.0 kJ/m ²	32.4 ft-lb/in ²	Type 1; ISO 180
Charpy Impact Unnotched	7.90 J/cm ²	37.6 ft-lb/in ²	Type 1, Edgewise; ISO 179
Charpy Impact, Notched	0.900 J/cm ²	4.28 ft-lb/in ²	Type 1, Edgewise; ISO 179

Mechanical Properties	Metric	English	Comments
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	15.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	8.33 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	2
	@Temperature 100 - 200 $\text{Å}^\circ\text{C}$	@Temperature 212 - 392 $\text{Å}^\circ\text{F}$	
	20.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	11.1 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	2
	@Temperature 0.000 - 100 $\text{Å}^\circ\text{C}$	@Temperature 32.0 - 212 $\text{Å}^\circ\text{F}$	
CTE, linear, Transverse to Flow	76.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	42.2 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	TMA; ASTM E831
	@Temperature 0.000 - 100 $\text{Å}^\circ\text{C}$	@Temperature 32.0 - 212 $\text{Å}^\circ\text{F}$	
	120 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	66.7 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	TMA; ASTM E831
	@Temperature 100 - 200 $\text{Å}^\circ\text{C}$	@Temperature 212 - 392 $\text{Å}^\circ\text{F}$	
Melting Point	327 $\text{Å}^\circ\text{C}$	621 $\text{Å}^\circ\text{F}$	ISO 11357-3
Deflection Temperature at 1.8 MPa (264 psi)	$\geq 300 \text{ Å}^\circ\text{C}$	$\geq 572 \text{ Å}^\circ\text{F}$	Unannealed; ISO 75-2/A
Glass Transition Temp, Tg	95.0 $\text{Å}^\circ\text{C}$	203 $\text{Å}^\circ\text{F}$	DSC
Flammability, UL94	HB	HB	
	@Thickness 3.20 mm	@Thickness 0.126 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	5.60e+15 ohm-cm	5.60e+15 ohm-cm	ASTM D257
Dielectric Constant	3.75	3.75	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	4.1	4.1	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dielectric Strength	19.0 kV/mm	483 kV/in	ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.0060	0.0060	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.015	0.015	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Comparative Tracking Index Electrical Properties	600 V Metric	600 V English	UL 746 Comments
High Voltage Arc-Tracking Rate, HVTR	14.0 mm/min	0.551 in/min	UL 746

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	320 - 330 Â°C	608 - 626 Â°F	
Middle Barrel Temperature	320 - 330 Â°C	608 - 626 Â°F	
Front Barrel Temperature	327 - 335 Â°C	621 - 635 Â°F	
Melt Temperature	330 - 345 Â°C	626 - 653 Â°F	
Mold Temperature	65.0 - 95.0 Â°C	149 - 203 Â°F	
Drying Temperature	120 Â°C @Time 14400 sec	248 Â°F @Time 4.00 hour	
Moisture Content	0.030 - 0.060 %	0.030 - 0.060 %	Suggested Max

Descriptive Properties	Value	Comments
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Black; Natural	
Form	Pellets	
Processing Technique	Injection Molding	

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