

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

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

Material Notes:

Amodel® AS-4133 HS is a 33% glass reinforced, lubricated, heat stabilized grade of polyphthalamide (PPA) that offers fast cycle times and moldability in hot water molds. Testing conducted on samples dry as molded and samples conditioned to 50% relative humidity in accordance with ISO-1110, Accelerated Method. Typical applications include electrical and electronic components especially for automotive systems. Features: Fast Molding Cycle; Good Chemical Resistance; Good Creep Resistance; Good Dimensional Stability; Good Stiffness; Heat Stabilized; High Heat Resistance; High Strength; Hot Water Moldability; Laser Weldable; Low Moisture Absorption; Lubricated Uses: Automotive Applications; Automotive Electronics; Automotive Under the Hood; Cell Phones; Connectors; Electrical/Electronic Applications; General Purpose; Industrial Applications; Industrial Parts; Lawn and Garden Equipment; Machine/Mechanical Parts; Metal Replacement; Thick-walled Parts; Valves/Valve Parts 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: Transmittance - ASTM D1003 (1.60 mm): > 20 %; Transmittance - ASTM D1003 (1.60 mm): > 20 % Automotive Specifications ASTM D4000 PA102 G35 Color: BK324 Black; ASTM D4000 PA102 G35 Color: NT Natural; ASTM D4000 PPA0121 G34 GB145 KD170 KN100 PN060 YI285 Color: BK324 Black; ASTM D4000 PPA0121 G34 GB145 KD170 KN100 PN060 YI285 Color: NT Natural; ASTM D6779 PA102G35; BOSCH N28 BN05-0X2 BN0515-GF35-3ANf01AM Color: NT Natural; BOSCH N28 BN05-0X2 BN0515-GF35-3ASw01AM Color: BK324 Black; CHRYSLER MS-DB-478 Type A CPN3598 Color: BK Black; CHRYSLER MS-DB-478 Type A CPN3972 Color: Natural; DELPHI M-2396 Color: BK324 Black; DELPHI M-2396 M2396001 Color: NT Natural; DELPHI M-2396 M2396002 Color: BK-324 Black; DELPHI M-2396 M239600x Color: BU474 Blue; DELPHI M-53291 Color: BU474 Blue; DELPHI M-53293 Color: BK324 Black; DELPHI M-53293 Color: NT Natural; DELPHI M-6081 Color: NT Natural; DELPHI M-6083 Color: BK324 Black; GM GMP.PPA.002 Color: BK324 Black; GM GMP.PPA.002 Color: NT Natural; GM GMW16357P-PPA-GF35 Color: Black; GM GMW16357P-PPA-GF35 Color: Natural; ISO 1874 PA6T/66, MH, 12-120, GF33 Color: BK324 Black; ISO 1874 PA6T/66, MH, 12-120, GF33 Color: NT Natural; TORRINGTON T-456 Color: BK324 Black; TRW S-13972700 Color: BK324 Black; TRW S-13972700 Color: NT Natural; TYCO 100-1392 Color: BK324 Black; TYCO 100-1392 Color: NT Natural; YAZAKI YPES-25-02-306 Color: BK324 Black; YAZAKI YPES-25-02-306 Color: NT Natural Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Amodel-AS-4133-HS-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	0.29 % @Time 86400 sec	0.29 % @Time 24.0 hour	ISO 62
Linear Mold Shrinkage, Flow	0.0050 cm/cm	0.0050 in/in	

Physical Properties	Metric	English	Comments
Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	79.3 MPa	11500 psi	4; ISO 527-2
	@Temperature 175 Â°C	@Temperature 347 Â°F	
	87.6 MPa	12700 psi	4; ISO 527-2
	@Temperature 150 Â°C	@Temperature 302 Â°F	
	125 MPa	18100 psi	4; ISO 527-2
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	211 MPa	30600 psi	4; ISO 527-2
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Tensile Strength	200 MPa	29000 psi	ASTM D638
Elongation at Break	2.5 %	2.5 %	ASTM D638
	2.6 %	2.6 %	ISO 527-2
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
	4.3 %	4.3 %	ISO 527-2
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	6.6 %	6.6 %	ISO 527-2
	@Temperature 175 Â°C	@Temperature 347 Â°F	
	6.6 %	6.6 %	ISO 527-2
	@Temperature 150 Â°C	@Temperature 302 Â°F	
	11.7 GPa	1700 ksi	ASTM D638
	4.83 GPa	701 ksi	4; ISO 527-2
	@Temperature 175 Â°C	@Temperature 347 Â°F	
	5.31 GPa	770 ksi	4; ISO 527-2
	@Temperature 150 Â°C	@Temperature 302 Â°F	
	6.83 GPa	991 ksi	4; ISO 527-2
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	12.6 GPa	1830 ksi	4; ISO 527-2
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	

Mechanical Properties	Metric	English	Comments
Flexural Strength	99.3 MPa	14400 psi	4; ISO 178
	@Temperature 175 Â°C	@Temperature 347 Â°F	
	111 MPa	16100 psi	4; ISO 178
	@Temperature 150 Â°C	@Temperature 302 Â°F	
	177 MPa	25700 psi	4; ISO 178
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	296 MPa	42900 psi	4; ISO 178
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Flexural Modulus	11.0 GPa	1600 ksi	ASTM D790
	4.21 GPa	611 ksi	ISO 178
	@Temperature 175 Â°C	@Temperature 347 Â°F	
	4.62 GPa	670 ksi	ISO 178
	@Temperature 150 Â°C	@Temperature 302 Â°F	
	7.17 GPa	1040 ksi	ISO 178
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	10.4 GPa	1510 ksi	ISO 178
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Compressive Strength	179 MPa	26000 psi	ASTM D695
Poissons Ratio	0.41	0.41	ASTM E132
Shear Strength	89.6 MPa	13000 psi	ASTM D732
Izod Impact, Notched	0.800 J/cm	1.50 ft-lb/in	ASTM D256
Izod Impact, Unnotched	9.60 J/cm	18.0 ft-lb/in	ASTM D256
Izod Impact, Notched (ISO)	9.70 kJ/mÂ²	4.62 ft-lb/inÂ²	Type 1, Notch A; ISO 180
Izod Impact, Unnotched (ISO)	59.0 kJ/mÂ²	28.1 ft-lb/inÂ²	Type 1; ISO 180
Charpy Impact Unnotched	6.70 J/cmÂ²	31.9 ft-lb/inÂ²	Type 1, Edgewise; ISO 179
Charpy Impact, Notched	1.10 J/cmÂ²	5.23 ft-lb/inÂ²	Type 1, Edgewise; ISO 179

Thermal Properties	Metric	English	Comments
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Thermal Properties	Metric $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	English $\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	Comments
CTE, linear, Parallel to Flow	@Temperature 100 - 200 $\text{Å}^\circ\text{C}$	@Temperature 212 - 392 $\text{Å}^\circ\text{F}$	2
	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
CTE, linear, Transverse to Flow	@Temperature 0.000 - 100 $\text{Å}^\circ\text{C}$	@Temperature 32.0 - 212 $\text{Å}^\circ\text{F}$	TMA; ASTM E831
	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
Melting Point	@Temperature 100 - 200 $\text{Å}^\circ\text{C}$	@Temperature 212 - 392 $\text{Å}^\circ\text{F}$	ISO 11357-3
	327 $\text{Å}^\circ\text{C}$	621 $\text{Å}^\circ\text{F}$	DSC
Maximum Service Temperature, Air	210 $\text{Å}^\circ\text{C}$	410 $\text{Å}^\circ\text{F}$	Continuous Use
Deflection Temperature at 0.46 MPa (66 psi)	320 $\text{Å}^\circ\text{C}$	608 $\text{Å}^\circ\text{F}$	Annealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	294 $\text{Å}^\circ\text{C}$	561 $\text{Å}^\circ\text{F}$	Unannealed; ISO 75-2/A
	300 $\text{Å}^\circ\text{C}$	572 $\text{Å}^\circ\text{F}$	Annealed; ASTM D648
Flammability, UL94	@Thickness 3.20 mm	@Thickness 0.126 in	
	HB	HB	

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+16 ohm-cm	2.00e+16 ohm-cm	ASTM D257
Dielectric Constant	3.6	3.6	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	3.8	3.8	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dissipation Factor	20.0 kV/mm	508 kV/in	ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	0.0040	0.0040	ASTM D150

Electrical Properties	@Frequency 60.0 Hz Metric	@Frequency 60.0 Hz English	Comments
	0.012	0.012	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	600 V	600 V	UL 746
High Voltage Arc-Tracking Rate, HVTR	14.0 mm/min	0.551 in/min	UL 746

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	318 - 324 Â°C	604 - 615 Â°F	
Front Barrel Temperature	327 - 332 Â°C	621 - 630 Â°F	
Melt Temperature	329 - 343 Â°C	624 - 649 Â°F	
Mold Temperature	65.6 - 93.3 Â°C	150 - 200 Â°F	
Drying Temperature	120 Â°C	248 Â°F	
	@Time 14400 sec	@Time 4.00 hour	
Moisture Content	<= 0.045 %	<= 0.045 %	

Descriptive Properties	Value	Comments
Additive	Heat Stabilizer	
	Lubricant	
	Mold Release	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Black; Natural	
Form	Pellets	
Processing Technique	Water-Heated Mold Injection Molding	
RoHS Compliance	RoHS Compliant	

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