

Solvay Specialty Polymers Amodel® AS-4133 HN Polyphthalamide (PPA), Dry, 33% Glass Fiber Reinforcement, Heat Stabilizer

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

Material Notes:

Amodel AS-4133 HN polyphthalamide (PPA) is a non-lubricated, heat stabilized grade that offers fast cycle times and is hot-water moldable. Typical applications include electrical and electronic components especially for automotive systems. - Black: AS-4133 HN BK 543
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; Low Moisture Absorption
Uses: Automotive Applications; Automotive Under the Hood; Connectors; General Purpose; Industrial Applications; Lawn and Garden Equipment; Machine/Mechanical Parts; Metal Replacement; Valves/Valve Parts
Availability: Africa & Middle East; Asia Pacific; Europe; North America; South America
Injection Rate: 3 to 4 in/sec
Holding Pressure: 50% of injection pressure
 Information provide by Solvay Specialty Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Amodel-AS-4133-HN-Polyphthalamide-PPA-Dry-33-Glass-Fiber-Reinforcement-Heat-Stabilizer.php

Physical Properties	Metric	English	Comments
Density	1.45 g/cc	0.0524 lb/in ³	ISO 1183 Method A
Water Absorption	0.29 %	0.29 %	24 hrs; ASTM D570
Linear Mold Shrinkage, Flow	0.0050 cm/cm	0.0050 in/in	ASTM D955
Linear Mold Shrinkage, Transverse	0.010 cm/cm	0.010 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	79.3 MPa	11500 psi	ISO 527-2
	@Temperature 175 °C	@Temperature 347 °F	
	87.6 MPa	12700 psi	ISO 527-2
	@Temperature 150 °C	@Temperature 302 °F	
Tensile Strength	125 MPa	18100 psi	ISO 527-2
	@Temperature 100 °C	@Temperature 212 °F	
Tensile Strength	211 MPa	30600 psi	ISO 527-2
	@Temperature 23.0 °C	@Temperature 73.4 °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 °C	@Temperature 73.4 °F		

Mechanical Properties	Metric	English	Comments
	@Temperature 100 °C	@Temperature 212 °F	
	6.6 %	6.6 %	ISO 527-2
	@Temperature 175 °C	@Temperature 347 °F	
	6.6 %	6.6 %	ISO 527-2
	@Temperature 150 °C	@Temperature 302 °F	
Tensile Modulus	11.7 GPa	1700 ksi	ASTM D638
	4.83 GPa	701 ksi	ISO 527-2
	@Temperature 175 °C	@Temperature 347 °F	
	5.31 GPa	770 ksi	ISO 527-2
	@Temperature 150 °C	@Temperature 302 °F	
	6.83 GPa	991 ksi	ISO 527-2
	@Temperature 100 °C	@Temperature 212 °F	
	12.6 GPa	1830 ksi	ISO 527-2
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Strength	290 MPa	42100 psi	ASTM D790
	99.3 MPa	14400 psi	ISO 178
	@Temperature 175 °C	@Temperature 347 °F	
	111 MPa	16100 psi	ISO 178
	@Temperature 150 °C	@Temperature 302 °F	
	177 MPa	25700 psi	ISO 178
	@Temperature 100 °C	@Temperature 212 °F	
	296 MPa	42900 psi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Modulus	11.0 GPa	1600 ksi	ASTM D790
	4.21 GPa	611 ksi	ISO 178
	@Temperature 175 °C	@Temperature 347 °F	
	4.62 GPa	670 ksi	ISO 178
	@Temperature 150 °C	@Temperature 302 °F	
	7.17 GPa	1040 ksi	ISO 178

Mechanical Properties	@Temperature 100 °C Metric	@Temperature 212 °F English	Comments
	10.4 GPa	1510 ksi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Strength	179 MPa	26000 psi	ASTM D695
Poissons Ratio	0.41	0.41	ASTM E132
Shear Modulus	4.15 - 4.47 GPa	602 - 648 ksi	Calculated
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/m ²	4.62 ft-lb/in ²	23°C, Type 1, Notch A; ISO 180
Izod Impact, Unnotched (ISO)	59.0 kJ/m ²	28.1 ft-lb/in ²	23°C, Type 1; ISO 180
Charpy Impact Unnotched	6.70 J/cm ²	31.9 ft-lb/in ²	23°C, Type 1, Edgewise; ISO 179
Charpy Impact, Notched	1.10 J/cm ²	5.23 ft-lb/in ²	23°C, Type 1, Edgewise, Notch A; ISO 179

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	14.0 µm/m-°C	7.78 µin/in-°F	ASTM E831
	@Temperature 149 - 249 °C	@Temperature 300 - 480 °F	
	22.0 µm/m-°C	12.2 µin/in-°F	ASTM E831
	@Temperature 0.000 - 90.0 °C	@Temperature 32.0 - 194 °F	
CTE, linear, Transverse to Flow	59.0 µm/m-°C	32.8 µin/in-°F	ASTM E831
	@Temperature 0.000 - 90.0 °C	@Temperature 32.0 - 194 °F	
	120 µm/m-°C	66.7 µin/in-°F	ASTM E831
	@Temperature 149 - 249 °C	@Temperature 300 - 480 °F	
Melting Point	327 °C	621 °F	ISO 11357-3
	327 °C	621 °F	
Maximum Service Temperature, Air	210 °C	410 °F	ASTM D794
Deflection Temperature at 0.46 MPa (66 psi)	320 °C	608 °F	Annealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	

Thermal Properties (Tensile at 1.8 MPa (264 psi))	Metric	English	Comments (ASTM D648; ISO 75-2/A)
	300 °C	572 °F	Annealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Flammability, UL94	HB	HB	
	@Thickness 3.20 mm	@Thickness 0.126 in	

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	
Dielectric Strength	20.0 kV/mm	508 kV/in	ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0040	0.0040	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Comparative Tracking Index	0.012	0.012	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
High Voltage Arc-Tracking Rate, HVTR	600 V	600 V	
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 °C	604 - 615 °F	
Front Barrel Temperature	327 - 332 °C	621 - 630 °F	
Melt Temperature	329 - 343 °C	624 - 649 °F	
Mold Temperature	65.6 - 93.3 °C	150 - 200 °F	
Drying Temperature	120 °C	248 °F	
Dry Time	4 hour	4 hour	
Moisture Content	0.045 %	0.045 %	suggested max

Descriptive Properties	Value	Comments
Appearance	Black	
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	
	BOSCH N28 BN05-OX2 Color: BK324 Black	
	BOSCH N28 BN05-OX2 Color: NT Natural	
	CHRYSLER MS-DB478 Type A CPN3598 Color: BK Black	
	CHRYSLER MS-DB478 Type A CPN3972 Color: Natural	
	DELPHI M-2396 Color: BK	
	DELPHI M-2396 Color: BK324 Black	
	DELPHI M-2396 Color: BU474 Blue	
	DELPHI M-2396 Color: NT Natural	
	DELPHI M-53291 Color: BU474 Blue	
	DELPHI M-53293 Color: BK324 Black	
	DELPHI M-53293 Color: NT Natural	

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