

Solvay Specialty Polymers Amodel® AS-4133 HS Polyphthalamide (PPA) (Unverified Data**)

Category : Polymer , Thermoplastic , Polyphthalamide (PPA)

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. Typical applications include electrical and electronic components especially for automotive systems. -
Black: AS-4133 HS BK 324 - Natural: AS-4133 HS NT
Injection Notes: Injection Rate: 3 to 4 in/sec Holding Pressure: 50% of injection pressure
Data is presented for dry polymer. 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-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.45 g/cc	0.0524 lb/in ³	ISO 1183/A
Filler Content	33 %	33 %	Glass Fiber Reinforcement
Water Absorption	0.29 % @Time 86400 sec	0.29 % @Time 24.0 hour	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 @Temperature 175 °C	11500 psi @Temperature 347 °F	ISO 527-2
	87.6 MPa @Temperature 150 °C	12700 psi @Temperature 302 °F	ISO 527-2
	125 MPa @Temperature 100 °C	18100 psi @Temperature 212 °F	ISO 527-2
	211 MPa @Temperature 23.0 °C	30600 psi @Temperature 73.4 °F	ISO 527-2
Tensile Strength	200 MPa	29000 psi	ASTM D638
Elongation at Break	2.5 %	2.5 %	ASTM D638
	2.6 % @Temperature 23.0 °C	2.6 % @Temperature 73.4 °F	ISO 527-2
	4.3 %	4.3 %	

Mechanical Properties	Metric @Temperature 100 °C	English @Temperature 212 °F	ISO 527-2 Comments
	6.6 %	6.6 %	ISO 527-2
	@Temperature 150 °C	@Temperature 302 °F	
	6.6 %	6.6 %	ISO 527-2
	@Temperature 175 °C	@Temperature 347 °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
	@Temperature 100 °C	@Temperature 212 °F	

Mechanical Properties	10.4 GPa Metric	1510 ksi English	Comments
	@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
	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	ISO 180/1A
Izod Impact, Unnotched (ISO)	59.0 kJ/m ²	28.1 ft-lb/in ²	ISO 180/1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	6.70 J/cm ²	31.9 ft-lb/in ²	ISO 179/1eU
Charpy Impact, Notched	1.10 J/cm ²	5.23 ft-lb/in ²	ISO 179/1eA

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	15.0 µm/m-°C	8.33 µin/in-°F	TMA; ASTM E831
	@Temperature 100 - 200 °C	@Temperature 212 - 392 °F	
	20.0 µm/m-°C	11.1 µin/in-°F	TMA; ASTM E831
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
CTE, linear, Transverse to Flow	76.0 µm/m-°C	42.2 µin/in-°F	ASTM E831
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
	120 µm/m-°C	66.7 µin/in-°F	ASTM E831
	@Temperature 100 - 200 °C	@Temperature 212 - 392 °F	
Melting Point	327 °C	621 °F	ISO 11357-3
	327 °C	621 °F	ASTM D570
Maximum Service Temperature, Air	210 °C	410 °F	Continuous; ASTM D3045
	@Time 5.40e+6 sec	@Time 1500 hour	
Deflection Temperature at 0.46 MPa (66 psi)	320 °C	608 °F	Annealed; ASTM D648

Thermal Properties	@Thickness 3.20 mm Metric	@Thickness 0.126 in English	Comments
Deflection Temperature at 1.8 MPa (264 psi)	294 °C	561 °F	Unannealed; ISO 75-2/A
	300 °C	572 °F	Annealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Flammability, UL94	HB	HB	UL 94
	@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	
	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	
	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 °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	4.00 hour	4.00 hour	

Moisture Content Processing Properties	0.045 % Metric	0.045 % English	Comments
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Descriptive Properties	Value	Comments
Additive	Heat Stabilizer	
	Lubricant	
	Mold Release	
Appearance	Black	
	Natural Color	
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-OX2 BN0515-GF35-3Anf01AM Color: NT Natural	
	BOSCH N28 BN05-OX2 BN0515-GF35-3Asw01AM Color: BK324 Black	
CHRYSLER MS-DB478 Type A CPN3598 Color: BK Black		

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China