

Solvay Specialty Polymers Amodel® A-1145 HS Polyphthalamide (PPA), 45% Glass Fiber (Dry)

Category : Polymer , Thermoplastic , Polyphthalamide (PPA) , Polyphthalamide (PPA), 50% Glass Fiber Reinforced

Material Notes:

Amodel® A-1145 HS is a 45% glass reinforced, heat stabilized polyphthalamide (PPA) with a high heat deflection temperature, very high flexural modulus and very high tensile strength. Excellent creep resistance and low moisture absorption are also characteristic of this resin.Features: Good Chemical Resistance; Good Creep Resistance; Good Dimensional Stability; Good Stiffness; High Heat Resistance; High Strength; High Temperature Strength; Low Moisture AbsorptionUses: Automotive Applications; Automotive Electronics; Automotive Under the Hood; Connectors; Housings; Industrial Applications; Industrial Parts; Machine/Mechanical Parts; Metal Replacement; Power/Other Tools; Valves/Valve PartsInjection 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.Automotive Specifications 3M 11-0003-5762-1 Color: BK324 Black; ASTM D4000 PA121 G45 Color: BK324 Black; ASTM D4000 PA121 G45 Color: NT Natural; ASTM D4000 PPA0120 G46 A95726 AA002 CD295 GB159 MF015Z Color: BN575 Brown; ASTM D6779 PA121G45; BOSCH 9 916 365 011 Color: BK 324 Black; BOSCH 9 916 365 011 Color: NT Natural; CHRYSLER MS-DB-478 Type B CPN3567 Color: Black; FORD WSB-M4D861-A Color: BK324 Black; FORD WSB-M4D861-A Color: NT Natural; GM GMP.PPA.008 Color: BK324 Black; GM GMP.PPA.008 Color: NT Natural; GM GMW16356P-PPA-GF45 Color: BK-324 Black; GM GMW16356P-PPA-GF45 Color: NT Natural; ISO 1874 PA6T/6I/66, MH, 12-160, GF45 Color: NT Natural; TRW S-13301201 Color: BK324 BlackInformation provided by Solvay Specialty Polymers.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Amodel-A-1145-HS-Polyphthalamide-PPA-45-Glass-Fiber-Dry.php

Physical Properties	Metric	English	Comments
Density	1.59 g/cc	0.0574 lb/in ³	ISO 1183
Filler Content	45 %	45 %	Glass Fiber
Water Absorption	0.12 %	0.12 %	ISO 62
	@Time 86400 sec	@Time 24.0 hour	
Linear Mold Shrinkage, Flow	0.0020 cm/cm	0.0020 in/in	
Linear Mold Shrinkage, Transverse	0.0060 cm/cm	0.0060 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	125	125	ASTM D785
Tensile Strength at Break	75.8 MPa	11000 psi	4; ISO 527-2
	@Temperature 175 °C	@Temperature 347 °F	
	84.8 MPa	12300 psi	4; ISO 527-2

Mechanical Properties	@Temperature 150 Â°C Metric	@Temperature 302 Â°F English	Comments
	173 MPa	25100 psi	4; ISO 527-2
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	263 MPa	38100 psi	4; ISO 527-2
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Tensile Strength	259 MPa	37600 psi	ASTM D638
Elongation at Break	2.6 %	2.6 %	ASTM D638
	2.5 %	2.5 %	ISO 527-2
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	2.7 %	2.7 %	ISO 527-2
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
	6.5 %	6.5 %	ISO 527-2
	@Temperature 175 Â°C	@Temperature 347 Â°F	
	7.2 %	7.2 %	ISO 527-2
	@Temperature 150 Â°C	@Temperature 302 Â°F	
Tensile Modulus	17.2 GPa	2490 ksi	ASTM D638
	5.38 GPa	780 ksi	4; ISO 527-2
	@Temperature 175 Â°C	@Temperature 347 Â°F	
	8.00 GPa	1160 ksi	4; ISO 527-2
	@Temperature 150 Â°C	@Temperature 302 Â°F	
	11.2 GPa	1620 ksi	4; ISO 527-2
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	16.8 GPa	2440 ksi	4; ISO 527-2
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Flexural Strength	363 MPa	52600 psi	ASTM D790
	94.5 MPa	13700 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	

Mechanical Properties	267 MPa Metric	38700 psi English	Comments 4; ISO 178
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	377 MPa @Temperature 23.0 Â°C	54700 psi @Temperature 73.4 Â°F	4; ISO 178
Flexural Modulus	13.8 GPa	2000 ksi	ASTM D790
	4.90 GPa @Temperature 175 Â°C	711 ksi @Temperature 347 Â°F	ISO 178
	5.38 GPa @Temperature 150 Â°C	780 ksi @Temperature 302 Â°F	ISO 178
	13.0 GPa @Temperature 100 Â°C	1890 ksi @Temperature 212 Â°F	ISO 178
	15.9 GPa @Temperature 23.0 Â°C	2310 ksi @Temperature 73.4 Â°F	ISO 178
Compressive Strength	194 MPa @Thickness 25.4 mm	28100 psi @Thickness 1.00 in	ASTM D695
Poissons Ratio	0.41	0.41	ASTM E132
Shear Strength	108 MPa	15700 psi	ASTM D732
Izod Impact, Notched	1.10 J/cm	2.06 ft-lb/in	ASTM D256
Izod Impact, Unnotched	11.0 J/cm	20.6 ft-lb/in	ASTM D256
Izod Impact, Notched (ISO)	10.0 kJ/mÂ²	4.76 ft-lb/inÂ²	Type 1, Notch A; ISO 180
Izod Impact, Unnotched (ISO)	61.0 kJ/mÂ²	29.0 ft-lb/inÂ²	Type 1; ISO 180
Charpy Impact Unnotched	9.20 J/cmÂ²	43.8 ft-lb/inÂ²	Type 1, Edgewise; ISO 179
Charpy Impact, Notched	1.00 J/cmÂ²	4.76 ft-lb/inÂ²	Type 1, Edgewise; ISO 179

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	14.0 Âµm/m-Â°C @Temperature 0.000 - 100 Â°C	7.78 Âµin/in-Â°F @Temperature 32.0 - 212 Â°F	2
	35.0 Âµm/m-Â°C @Temperature 100 -	19.4 Âµin/in-Â°F @Temperature 212 -	2

Thermal Properties	200 Â°C Metric	392 Â°F English	Comments
CTE, linear, Transverse to Flow	50.0 Âµm/m-Â°C	27.8 Âµin/in-Â°F	TMA; ASTM E831
	@Temperature 0.000 - 100 Â°C	@Temperature 32.0 - 212 Â°F	
	150 Âµm/m-Â°C	83.3 Âµin/in-Â°F	TMA; ASTM E831
	@Temperature 100 - 200 Â°C	@Temperature 212 - 392 Â°F	
Melting Point	310 Â°C	590 Â°F	ASTM D3418
	310 Â°C	590 Â°F	ISO 11357-3
Maximum Service Temperature, Air	165 - 185 Â°C	329 - 365 Â°F	Continuous Use
Deflection Temperature at 0.46 MPa (66 psi)	301 Â°C	574 Â°F	Annealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	281 Â°C	538 Â°F	Unannealed; ISO 75-2/A
	287 Â°C	549 Â°F	
	@Thickness 3.20 mm	@Thickness 0.126 in	Annealed; ASTM D648
Flammability, UL94	HB	HB	
	@Thickness 3.20 mm	@Thickness 0.126 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	ASTM D257
Dielectric Constant	4.4	4.4	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	4.6	4.6	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dielectric Strength	23.0 kV/mm	584 kV/in	ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.0050	0.0050	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.016	0.016	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Arc Resistance	145 sec	145 sec	ASTM D495

Electrical Properties	Metric	English	Comments
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Processing Properties	Metric	English	Comments
Rear Barrel Temperature	304 - 318 Â°C	579 - 604 Â°F	
Front Barrel Temperature	316 - 329 Â°C	601 - 624 Â°F	
Melt Temperature	321 - 343 Â°C	610 - 649 Â°F	
Mold Temperature	135 Â°C	275 Â°F	
Drying Temperature	120 Â°C @Time 16200 sec	248 Â°F @Time 4.50 hour	
Moisture Content	<= 0.045 %	<= 0.045 %	

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

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