

Solvay Specialty Polymers Amodel® AT-1116 HS Polyphthalamide (PPA) (Unverified Data**)

Category : Polymer , Thermoplastic , Polyphthalamide (PPA)

Material Notes:

Amodel AT-1116 HS polyphthalamide (PPA) is a toughened, heat stabilized 16% glass reinforced resin, designed as a cost effective solution for applications requiring stiffness, good dimensional stability, chemical resistance and ductility. This resin has a high heat deflection temperature and a high flexural modulus, with greater tensile elongation than untoughened glass reinforced PPA. Typical applications include bearings, bearing retainers/cages, housings, chemical processing equipment components, motor frames, sporting equipment, lawn and garden equipment and components that require press-fit or snap-fit assembly. - Black: AT-1116 HS BK 324 - Natural: AT-1116 HS NTData is presented for dry polymer unless noted as 'conditioned'. Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Amodel-AT-1116-HS-Polyphthalamide-PPA-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.28 g/cc	0.0462 lb/in ³	ISO 1183/A
Filler Content	16 %	16 %	Glass Fiber Reinforcement
Water Absorption	0.20 % @Time 86400 sec	0.20 % @Time 24.0 hour	ASTM D570
Linear Mold Shrinkage, Flow	0.0060 cm/cm	0.0060 in/in	ASTM D955
Linear Mold Shrinkage, Transverse	0.0060 cm/cm	0.0060 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	65.5 MPa @Temperature 100 °C	9500 psi @Temperature 212 °F	ISO 527-2
	160 MPa @Temperature 23.0 °C	23200 psi @Temperature 73.4 °F	ISO 527-2
Tensile Strength	131 MPa	19000 psi	Conditioned; ASTM D638
	161 MPa	23400 psi	ASTM D638
Elongation at Break	2.8 %	2.8 %	Conditioned; ASTM D638
	3.8 %	3.8 %	ASTM D638
	3.7 % @Temperature 23.0 °C	3.7 % @Temperature 73.4 °F	ISO 527-2
	4.2 %	4.2 %	

Mechanical Properties	Metric @ Temperature 100 °C	English @ Temperature 212 °F	ISO 527-2 Comments
Tensile Modulus	6.48 GPa	940 ksi	ASTM D638
	7.10 GPa	1030 ksi	Conditioned; ASTM D638
	6.69 GPa	970 ksi	ISO 527-2
	@Temperature 100 °C	@Temperature 212 °F	
	6.89 GPa	999 ksi	ISO 527-2
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Strength	201 MPa	29200 psi	Conditioned; ASTM D790
	226 MPa	32800 psi	ASTM D790
	141 MPa	20500 psi	ISO 178
	@Temperature 100 °C	@Temperature 212 °F	
	197 MPa	28600 psi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Modulus	6.00 GPa	870 ksi	ASTM D790
	6.21 GPa	901 ksi	Conditioned; ASTM D790
	4.96 GPa	719 ksi	ISO 178
	@Temperature 100 °C	@Temperature 212 °F	
	6.69 GPa	970 ksi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Strength	124 MPa	18000 psi	ASTM D695
Shear Strength	65.5 MPa	9500 psi	Conditioned; ASTM D732
	69.6 MPa	10100 psi	ASTM D732
Izod Impact, Notched	0.480 J/cm	0.899 ft-lb/in	Conditioned; ASTM D256
	0.960 J/cm	1.80 ft-lb/in	ASTM D256
	8.00 J/cm	15.0 ft-lb/in	Conditioned; ASTM D256
	9.60 J/cm	18.0 ft-lb/in	ASTM D256
Izod Impact, Notched (ISO)	8.00 kJ/m ²	3.81 ft-lb/in ²	ISO 180/1A
Izod Impact, Unnotched (ISO)	53.0 kJ/m ²	25.2 ft-lb/in ²	ISO 180/1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric	English	Comments
Charpy Impact, Notched	0.900 J/cm ²	4.28 ft-lb/in ²	ISO 179/1eA
Dart Drop, Total Energy	7.59 J	5.60 ft-lb	Conditioned; ASTM D3763
	10.0 J	7.38 ft-lb	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	16.0 µm/m-°C	8.89 µin/in-°F	TMA; ASTM E831
	@Temperature 100 - 200 °C	@Temperature 212 - 392 °F	
	22.0 µm/m-°C	12.2 µin/in-°F	TMA; ASTM E831
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
CTE, linear, Transverse to Flow	75.0 µm/m-°C	41.7 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	310 °C	590 °F	Peak; ASTM D3418
Deflection Temperature at 0.46 MPa (66 psi)	268 °C	514 °F	Annealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	254 °C	489 °F	Annealed; ASTM D648
	258 °C	496 °F	Unannealed; ISO 75-2/A

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	304 - 318 °C	579 - 604 °F	
Front Barrel Temperature	316 - 329 °C	601 - 624 °F	
Melt Temperature	321 - 343 °C	610 - 649 °F	
Mold Temperature	135 °C	275 °F	
Drying Temperature	110 °C	230 °F	
Dry Time	4.00 hour	4.00 hour	
Moisture Content	0.045 %	0.045 %	

Descriptive Properties	Value	Comments
Additive	Heat Stabilizer	
	Impact Modifier	
Appearance	Black	
	Natural Color	
Automotive Specifications	ASTM D4000 PPA0111 G17 KD124 KN055 PN046 YI238 LD002 Color: BK 324 and NT Black and Natural	
	ASTM D6779 PA123G15 YI220	
	GM GMN6828	
	GM GMN6828 Color: BK 324 and NT Black and Natural	
	GM GMP.PPA.009 Color: BK 324 and NT Black and Natural	
	ISO 1874-PA 6T/6I/66-HI, MH, 12-060, GF16	
Availability	YAZAKI YPES-25-02-305 Color: BK 324 and NT Black and Natural	
	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Good Chemical Resistance	
	Good Dimensional Stability	
	Heat Stabilized	
	High Heat Resistance	
	Impact Modified	
Forms	Pellets	
Generic	PPA	
Processing Method	Injection Molding	
RoHS Compliance	RoHS Compliant	
Uses	Automotive Applications	

Descriptive Properties	Automotive Electronics	Comments
	Value	
	Automotive Under the Hood	
	Bearings	
	Bobbins	
	Connectors	
	General Purpose	
	Industrial Applications	
	Industrial Parts	
	Machine/Mechanical Parts	
	Metal Replacement	

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