

Amodel® AT-1116 HS

Polyphthalamide
Solvay Specialty Polymers

Message:

Amodel AT- 1116 HS is a 16% glass fiber reinforced polyphthalamide (PPA) toughened heat stable resin specially designed to meet high cost-effective products requiring high rigidity, high dimensional stability, chemical resistance and ductility. It has high thermal deformation temperature and high bending elastic modulus. The elongation at break is higher than that of non-toughened glass fiber reinforced PPA. Conventional applications include bearings, bearing cages/bearing covers, housings, components for chemical processing equipment, motor frames, sports equipment, lawn and gardening equipment, and components that require crimping or snap assembly. -Black: AT-1116 HS BK 324
natural color: AT-1116 HS NT

General Information	
UL YellowCard	E95746-253246
Filler / Reinforcement	Glass fiber reinforced material, 16% filler by weight
Additive	Impact modifier
	heat stabilizer
Features	Good dimensional stability
	Impact modification
	Good chemical resistance
	Heat resistance, high
	Thermal Stability
Uses	Industrial components
	Industrial application
	Machine/mechanical parts
	Metal substitution
	Connector
	Parts under the hood of a car
	Automotive Electronics
	Application in Automobile Field
	General
	spool
	Bearing
RoHS Compliance	RoHS compliance
Appearance	Black
	Natural color
Forms	Particle
Processing Method	Injection molding
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1)

Secant Modulus vs. Strain (ISO 11403-1)

Physical	Dry	Conditioned	Unit	Test Method
Density	1.28	--	g/cm ³	ISO 1183/A
Molding Shrinkage				ASTM D955
Flow	0.60	--	%	ASTM D955
Transverse flow	0.60	--	%	ASTM D955
Water Absorption (24 hr)	0.20	--	%	ASTM D570
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				
--	6480	7100	MPa	ASTM D638
23°C	6890	--	MPa	ISO 527-2
100°C	6690	--	MPa	ISO 527-2
Tensile Stress				
Fracture, 23°C	160	--	MPa	ISO 527-2
Fracture, 100°C	65.5	--	MPa	ISO 527-2
--	161	131	MPa	ASTM D638
Tensile Elongation				
Fracture	3.8	2.8	%	ASTM D638
Fracture, 23°C	3.7	--	%	ISO 527-2
Fracture, 100°C	4.2	--	%	ISO 527-2
Flexural Modulus				
--	6000	6210	MPa	ASTM D790
23°C	6690	--	MPa	ISO 178
100°C	4960	--	MPa	ISO 178
Flexural Strength				
--	226	201	MPa	ASTM D790
23°C	197	--	MPa	ISO 178
100°C	141	--	MPa	ISO 178
Compressive Strength	124	--	MPa	ASTM D695
Shear Strength	69.6	65.5	MPa	ASTM D732
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength (23°C)	9.0	--	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	86	--	kJ/m ²	ISO 179/1eU
Notched Izod Impact				
--	96	48	J/m	ASTM D256
23°C	8.0	--	kJ/m ²	ISO 180/1A
Unnotched Izod Impact				
--	960	800	J/m	ASTM D256
23°C	53	--	kJ/m ²	ISO 180/1U
Instrumented Dart Impact				ASTM D3763

Energy at Maxumum Load ¹	--	1.36	J	ASTM D3763
Total Energy	--	7.59	J	ASTM D3763
Total energy	10.0	--	J	ASTM D3763
Maximum load energy ²	1.76	--	J	ASTM D3763
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, annealed	268	--	°C	ASTM D648
1.8 MPa, not annealed	258	--	°C	ISO 75-2/A
1.8 MPa, annealed	254	--	°C	ASTM D648
Peak Melting Temperature	310	--	°C	ASTM D3418
Linear thermal expansion coefficient				ASTM E831
Flow: 0 to 100°C	2.2E-5	--	cm/cm/°C	ASTM E831
Flow: 100 to 200°C	1.6E-5	--	cm/cm/°C	ASTM E831
Lateral: 0 to 100°C	7.5E-5	--	cm/cm/°C	ASTM E831
Lateral: 100 to 200°C	1.2E-4	--	cm/cm/°C	ASTM E831
Injection	Dry	Unit		
Drying Temperature	110		°C	
Drying Time	4.0		hr	
Suggested Max Moisture	0.045		%	
Rear Temperature	304 - 318		°C	
Front Temperature	316 - 329		°C	
Processing (Melt) Temp	321 - 343		°C	
Mold Temperature	135		°C	
Injection instructions				

Storage:

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 following the recommendations found in this datasheet and/or in the Amodel® processing guide.

NOTE

1. Maximum Load: 200 lb (890 N)

2. Maximum load: 240 lb (1070 N)

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