

Solvay Specialty Polymers Amodel® ET-1000 HS Polyphthalamide (PPA) (Dry)

Category : Polymer , Thermoplastic , Polyphthalamide (PPA)

Material Notes:

Amodel® ET-1000 HS is an impact modified, heat stabilized polyphthalamide (PPA) that exhibits exceptional impact strength and toughness. Like all Amodel® PPA resins, ET-1000 HS offers high fatigue strength, good chemical resistance and high mechanical property retention over a broad temperature and humidity range. Features: Ductile; Good Chemical Resistance; Heat Stabilized; Hot Water Moldability; Impact Modified; Low Warpage. Uses: Automotive Applications; Automotive Electronics; Automotive Under the Hood; Connectors; General Purpose; Housings; Industrial Applications; Industrial Parts; Lawn and Garden Equipment; Machine/Mechanical Parts; Metal Replacement. Injection 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 ASTM D4000 PA1234 Color: BK684 Black; ASTM D4000 PA1234 Color: NT Natural; ASTM D6779 PA1234; DELPHI 23295267 Color: BK-684 Black; DELPHI 23295267 Color: NT Natural; DELPHI 28213409 Color: BK-684 Black; DELPHI 28213409 Color: NT Natural; DELPHI M-2965 Color: BK684 Black; DELPHI M-2965 Color: NT Natural; DELPHI MSP24103175 Color: NT Natural. Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Amodel-ET-1000-HS-Polyphthalamide-PPA-Dry.php

Physical Properties	Metric	English	Comments
Density	1.13 g/cc	0.0408 lb/in ³	ISO 1183
Water Absorption	0.70 % @Time 86400 sec	0.70 % @Time 24.0 hour	ISO 62
Linear Mold Shrinkage, Flow	0.015 cm/cm	0.015 in/in	
Linear Mold Shrinkage, Transverse	0.015 cm/cm	0.015 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ASTM D785
Tensile Strength at Break	60.0 MPa	8700 psi	ISO 527-2
Tensile Strength	68.9 MPa @Temperature 23.0 °C	9990 psi @Temperature 73.4 °F	ASTM D638
	110 MPa @Temperature -40.0 °C	16000 psi @Temperature -40.0 °F	ASTM D638

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	70.3 MPa @Temperature 100 Å°C	10200 psi @Temperature 212 Å°F	2; ISO 527-2
Elongation at Break	7.0 % @Temperature 23.0 Å°C	7.0 % @Temperature 73.4 Å°F	ISO 527-2
	12 % @Temperature -40.0 Å°C	12 % @Temperature -40.0 Å°F	ASTM D638
	20 % @Temperature 23.0 Å°C	20 % @Temperature 73.4 Å°F	ASTM D638
	95 % @Temperature 100 Å°C	95 % @Temperature 212 Å°F	ISO 527-2
Elongation at Yield	9.0 %	9.0 %	ASTM D638
	4.3 % @Temperature 100 Å°C	4.3 % @Temperature 212 Å°F	ISO 527-2
	5.0 % @Temperature 23.0 Å°C	5.0 % @Temperature 73.4 Å°F	ISO 527-2
Tensile Modulus	2.41 GPa	350 ksi	ASTM D638
	2.00 GPa @Temperature 100 Å°C	290 ksi @Temperature 212 Å°F	2; ISO 527-2
	2.41 GPa @Temperature 23.0 Å°C	350 ksi @Temperature 73.4 Å°F	2; ISO 527-2
Flexural Strength	109 MPa	15800 psi	ASTM D790
	44.1 MPa @Temperature 100 Å°C	6400 psi @Temperature 212 Å°F	2; ISO 178
	70.3 MPa @Temperature 23.0 Å°C	10200 psi @Temperature 73.4 Å°F	2; ISO 178

Flexural Modulus Mechanical Properties	2.28 GPa Metric	331 ksi English	ASTM D790 Comments
	1.31 GPa @Temperature 100 Â°C	190 ksi @Temperature 212 Â°F	ISO 178
	1.79 GPa @Temperature 23.0 Â°C	260 ksi @Temperature 73.4 Â°F	ISO 178
Shear Strength	58.6 MPa	8500 psi	ASTM D732
Izod Impact, Notched	1.10 J/cm @Temperature -40.0 Â°C	2.06 ft-lb/in @Temperature -40.0 Â°F	ASTM D256
	9.10 J/cm @Temperature 23.0 Â°C	17.0 ft-lb/in @Temperature 73.4 Â°F	ASTM D256
Izod Impact, Notched (ISO)	73.0 kJ/mÂ²	34.7 ft-lb/inÂ²	Type 1, Notch A; ISO 180
Izod Impact, Unnotched (ISO)	NB	NB	Type 1; ISO 180
Charpy Impact Unnotched	NB	NB	Type 1, Edgewise; ISO 179
Charpy Impact, Notched	7.80 J/cmÂ²	37.1 ft-lb/inÂ²	Type 1, Edgewise; ISO 179
Dart Drop, Total Energy	54.2 J	40.0 ft-lb	Instrumented; ASTM D3763
Taber Abrasion, mg/1000 Cycles	6.0	6.0	CS-17 Wheel, 1000 g; ASTM D1044

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	77.0 Âµm/m-Â°C @Temperature 0.000 - 100 Â°C	42.8 Âµin/in-Â°F @Temperature 32.0 - 212 Â°F	2
	140 Âµm/m-Â°C @Temperature 100 - 200 Â°C	77.8 Âµin/in-Â°F @Temperature 212 - 392 Â°F	2
CTE, linear, Transverse to Flow	81.0 Âµm/m-Â°C @Temperature 0.000 - 100 Â°C	45.0 Âµin/in-Â°F @Temperature 32.0 - 212 Â°F	TMA; ASTM E831
	110 Âµm/m-Â°C @Temperature 100 - 200 Â°C	61.1 Âµin/in-Â°F @Temperature 212 - 392 Â°F	TMA; ASTM E831
Melting Point	310 Â°C	590 Â°F	ASTM D3418

Thermal Properties	310 Â°C Metric	590 Â°F English	ISO 11357-3 Comments
Deflection Temperature at 1.8 MPa (264 psi)	109 Â°C	228 Â°F	Unannealed; ISO 75-2/A
	120 Â°C	248 Â°F	Annealed; ASTM D648

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	70.0 - 90.0 Â°C	158 - 194 Â°F	
Drying Temperature	110 Â°C @Time 14400 sec	230 Â°F @Time 4.00 hour	
Moisture Content	<= 0.045 %	<= 0.045 %	

Descriptive Properties	Value	Comments
Additive	Heat Stabilizer	
	Impact Modifier	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Natural	
Form	Pellets	
Processing Technique	Water-Heated Mold Injection Molding	
RoHS Compliance	RoHS Compliant	

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