

Amodel® ET-1000 HS

Polyphthalamide
Solvay Specialty Polymers

Message:

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.
Natural: ET-1000 HS NT

General Information				
UL YellowCard		E95746-253250		
Additive		Impact modifier heat stabilizer		
Features		Impact modification Low warpage Good chemical resistance Hot water formability Thermal Stability ductility		
Uses		Lawn and Garden Equipment Industrial components Industrial application Machine/mechanical parts Metal substitution Connector Parts under the hood of a car Automotive Electronics Application in Automobile Field General Shell		
RoHS Compliance		RoHS compliance		
Appearance		Natural color		
Forms		Particle		
Processing Method		Water temperature mold injection molding		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.13	--	g/cm ³	ISO 1183/A
Molding Shrinkage				ASTM D955
Flow	1.5	--	%	ASTM D955

Transverse flow	1.5	--	%	ASTM D955
Water Absorption (24 hr)	0.70	--	%	ASTM D570
Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness (R-Scale)	120	--		ASTM D785
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				
--	2410	2410	MPa	ASTM D638
23°C	2410	--	MPa	ISO 527-2
100°C	2000	--	MPa	ISO 527-2
Tensile Stress				
Yield, 23°C	70.3	--	MPa	ISO 527-2
Yield, 100°C	33.8	--	MPa	ISO 527-2
Fracture, 23°C	60.0	--	MPa	ISO 527-2
-40°C	110	96.5	MPa	ASTM D638
23°C	68.9	62.7	MPa	ASTM D638
Tensile Elongation				
Yield, -40°C	9.0	9.0	%	ASTM D638
Yield, 23°C	6.0	6.0	%	ASTM D638
Yield, 23°C	5.0	--	%	ISO 527-2
Yield, 100°C	4.3	--	%	ISO 527-2
Fracture, -40°C	12	11	%	ASTM D638
Fracture, 23°C	20	18	%	ASTM D638
Fracture, 23°C	7.0	--	%	ISO 527-2
Fracture, 100°C	95	--	%	ISO 527-2
Flexural Modulus				
--	2280	2140	MPa	ASTM D790
23°C	1790	--	MPa	ISO 178
100°C	1310	--	MPa	ISO 178
Flexural Strength				
--	109	85.5	MPa	ASTM D790
23°C	70.3	--	MPa	ISO 178
100°C	44.1	--	MPa	ISO 178
Shear Strength	58.6	--	MPa	ASTM D732
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	6.00	--	mg	ASTM D1044
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength (23°C)	78	--	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	No Break	--		ISO 179/1eU
Notched Izod Impact				
-40°C	110	--	J/m	ASTM D256

23°C	910	1100	J/m	ASTM D256
23°C	73	--	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength (23°C)	No Break	--		ISO 180/1U
Instrumented Dart Impact				ASTM D3763
Energy to Maximum Load ¹	38.0	--	J	ASTM D3763
Total energy	54.2	--	J	ASTM D3763
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
1.8 MPa, not annealed	109	--	°C	ISO 75-2/A
1.8 MPa, annealed	120	--	°C	ASTM D648
Melting Temperature	310	--	°C	ISO 11357-3, ASTM D3418
Linear thermal expansion coefficient				ASTM E831
Flow: 0 to 100°C	7.7E-5	--	cm/cm/°C	ASTM E831
Flow: 100 to 200°C	1.4E-4	--	cm/cm/°C	ASTM E831
Lateral: 0 to 100°C	8.1E-5	--	cm/cm/°C	ASTM E831
Lateral: 100 to 200°C	1.1E-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	70.0 - 90.0		°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: 1050lb(4670N)			

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

