

Amodel® AE-1133

Polyphthalamide
Solvay Specialty Polymers

Message:

AMODEL A- 1133 HS is a 33% glass fiber reinforced thermally stable polyphthalamide (PPA) with high thermal deformation temperature, high bending modulus and high tensile strength. Excellent creep resistance and low moisture absorption are also characteristics of the resin. -Black: A- 1133 HS BK 324
black: A- 1133 HS BK 543
natural color: A- 1133 HS NT

General Information			
Filler / Reinforcement	Glass fiber reinforced material, 33% filler by weight		
Additive	heat stabilizer		
Features	Good dimensional stability		
	Low hygroscopicity		
	Rigidity, high		
	Rigid, good		
	High strength		
	High temperature strength		
	Good creep resistance		
	Good chemical resistance		
	Heat resistance, high		
Uses	Electrical/Electronic Applications		
	Electrical components		
	Connector		
	Automotive Electronics		
RoHS Compliance	RoHS compliance		
Appearance	Black		
	Natural color		
Forms	Particle		
Processing Method	Injection molding		
Part Marking Code (ISO 11469)	>PA6T/6I/66-GF33		
Physical	Nominal Value	Unit	Test Method
Density	1.48	g/cm³	ISO 1183/A
Molding Shrinkage			ASTM D955
Flow	0.40	%	ASTM D955
Transverse flow	0.80	%	ASTM D955
Water Absorption (24 hr)	0.21	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method

Rockwell Hardness (R-Scale)	125		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
--	13100	MPa	ASTM D638
23°C	13400	MPa	ISO 527-2
100°C	10800	MPa	ISO 527-2
150°C	6700	MPa	ISO 527-2
175°C	4300	MPa	ISO 527-2
Tensile Stress			
Fracture, 23°C	233	MPa	ISO 527-2
Fracture, 100°C	148	MPa	ISO 527-2
Fracture, 150°C	80.0	MPa	ISO 527-2
Fracture, 175°C	72.0	MPa	ISO 527-2
--	221	MPa	ASTM D638
Tensile Elongation			
Fracture	2.5	%	ASTM D638
Fracture, 23°C	2.5	%	ISO 527-2
Fracture, 100°C	2.9	%	ISO 527-2
Fracture, 150°C	8.7	%	ISO 527-2
Fracture, 175°C	8.5	%	ISO 527-2
Flexural Modulus			
--	11400	MPa	ASTM D790
23°C	11600	MPa	ISO 178
100°C	9800	MPa	ISO 178
150°C	4000	MPa	ISO 178
175°C	3600	MPa	ISO 178
Flexural Strength			
--	317	MPa	ASTM D790
23°C	319	MPa	ISO 178
100°C	227	MPa	ISO 178
150°C	93.0	MPa	ISO 178
175°C	80.0	MPa	ISO 178
Compressive Strength	185	MPa	ASTM D695
Shear Strength	101	MPa	ASTM D732
Poisson's Ratio	0.41		ASTM E132
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	9.5	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	73	kJ/m ²	ISO 179/1eU
Notched Izod Impact			
--	80	J/m	ASTM D256
23°C	8.8	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			

--	770	J/m	ASTM D256
23°C	49	kJ/m ²	ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, annealed, 3.20mm	297	°C	ASTM D648
1.8 MPa, not annealed	280	°C	ISO 75-2/A
1.8 MPa, annealed, 3.20mm	285	°C	ASTM D648
Continuous Use Temperature			ASTM D3045
-- ¹	164	°C	ASTM D3045
-- ²	185	°C	ASTM D3045
Melting Temperature	313	°C	ASTM D570, ISO 11357-3
Linear thermal expansion coefficient			ASTM E831
Flow: 0 to 100°C	2.4E-5	cm/cm/°C	ASTM E831
Flow: 100 to 200°C	2.7E-5	cm/cm/°C	ASTM E831
Lateral: 0 to 100°C	5.5E-5	cm/cm/°C	ASTM E831
Lateral: 100 to 200°C	1.1E-4	cm/cm/°C	ASTM E831
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.0E+16	ohms · cm	ASTM D257
Dielectric Strength (3.20 mm)	21	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	4.40		ASTM D150
1 MHz	4.20		ASTM D150
Dissipation Factor			ASTM D150
60 Hz	5.0E-3		ASTM D150
1 MHz	0.017		ASTM D150
Arc Resistance	140	sec	ASTM D495
Comparative Tracking Index (CTI)	550	V	UL 746
Injection	Nominal Value	Unit	
Drying Temperature	120	°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.	20000 hours		

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