

Amodel® AS-4133 HS

Polyphthalamide
Solvay Specialty Polymers

Message:

Amodel AS- 4133 HS is a 33% glass fiber reinforced, lubricated and thermally stable polyphthalamide (PPA), which can be quickly processed and molded in water temperature molds. Conventional applications include electrical and electronic components, especially electronic and electrical components for automotive systems. -Black: AS-4133 HS BK 324
natural color: AS-4133 HS NT

General Information	
UL YellowCard	E95746-253240
Filler / Reinforcement	Glass fiber reinforced material, 33% filler by weight
Additive	heat stabilizer
	Lubricant
	demoulding
Features	Good dimensional stability
	Low hygroscopicity
	Rigid, good
	High strength
	Laser welding
	Fast molding cycle
	Good creep resistance
	Good chemical resistance
	Heat resistance, high
	Hot water formability
	Thermal Stability
	Lubrication
Uses	Lawn and Garden Equipment
	Electrical/Electronic Applications
	Valve/valve components
	Industrial components
	Industrial application
	Thick wall fittings (parts)
	Machine/mechanical parts
	Metal substitution
	Connector
	Parts under the hood of a car
	Automotive Electronics
	Application in Automobile Field

Mobile phone

General

RoHS Compliance	RoHS compliance			
Appearance	Black			
	Natural color			
Forms	Particle			
Processing Method	Water temperature mold injection molding			
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1)			
	Secant Modulus vs. Strain (ISO 11403-1)			
	Viscosity vs. Shear Rate (ISO 11403-2)			

Physical	Dry	Conditioned	Unit	Test Method
Density	1.45	--	g/cm ³	ISO 1183/A
Molding Shrinkage				ASTM D955
Flow	0.50	--	%	ASTM D955
Transverse flow	1.0	--	%	ASTM D955
Water Absorption (24 hr)	0.29	--	%	ASTM D570
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				
--	11700	11700	MPa	ASTM D638
23°C	12600	--	MPa	ISO 527-2
100°C	6830	--	MPa	ISO 527-2
150°C	5310	--	MPa	ISO 527-2
175°C	4830	--	MPa	ISO 527-2
Tensile Stress				
Fracture, 23°C	211	--	MPa	ISO 527-2
Fracture, 100°C	125	--	MPa	ISO 527-2
Fracture, 150°C	87.6	--	MPa	ISO 527-2
Fracture, 175°C	79.3	--	MPa	ISO 527-2
--	200	172	MPa	ASTM D638
Tensile Elongation				
Fracture	2.5	2.2	%	ASTM D638
Fracture, 23°C	2.6	--	%	ISO 527-2
Fracture, 100°C	4.3	--	%	ISO 527-2
Fracture, 150°C	6.6	--	%	ISO 527-2
Fracture, 175°C	6.6	--	%	ISO 527-2
Flexural Modulus				
--	11000	11000	MPa	ASTM D790
23°C	10400	--	MPa	ISO 178
100°C	7170	--	MPa	ISO 178

150°C	4620	--	MPa	ISO 178
175°C	4210	--	MPa	ISO 178
Flexural Strength				
--	290	241	MPa	ASTM D790
23°C	296	--	MPa	ISO 178
100°C	177	--	MPa	ISO 178
150°C	111	--	MPa	ISO 178
175°C	99.3	--	MPa	ISO 178
Compressive Strength	179	172	MPa	ASTM D695
Shear Strength	89.6	75.8	MPa	ASTM D732
Poisson's Ratio	0.41	--		ASTM E132
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength (23°C)	11	--	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	67	--	kJ/m ²	ISO 179/1eU
Notched Izod Impact				
--	80	69	J/m	ASTM D256
23°C	9.7	--	kJ/m ²	ISO 180/1A
Unnotched Izod Impact				
--	960	--	J/m	ASTM D256
23°C	59	--	kJ/m ²	ISO 180/1U
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, annealed, 3.20mm	320	--	°C	ASTM D648
1.8 MPa, not annealed	294	--	°C	ISO 75-2/A
1.8 MPa, annealed, 3.20mm	300	--	°C	ASTM D648
Continuous Use Temperature ¹	210	--	°C	ASTM D3045
Melting Temperature	327	--	°C	ASTM D570, ISO 11357-3
Linear thermal expansion coefficient				ASTM E831
Flow: 0 to 100°C	2.0E-5	--	cm/cm/°C	ASTM E831
Flow: 100 to 200°C	1.5E-5	--	cm/cm/°C	ASTM E831
Lateral: 0 to 100°C	7.6E-5	--	cm/cm/°C	ASTM E831
Lateral: 100 to 200°C	1.2E-4	--	cm/cm/°C	ASTM E831
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity	2.0E+16	5.0E+14	ohms · cm	ASTM D257
Dielectric Strength (1.60 mm)	20	20	kV/mm	ASTM D149
Dielectric Constant				ASTM D150
60 Hz	3.80	4.30		ASTM D150

1 MHz	3.60	3.40		ASTM D150
Dissipation Factor				ASTM D150
60 Hz	4.0E-3	0.020		ASTM D150
1 MHz	0.012	0.019		ASTM D150
Comparative Tracking Index (CTI)	600	600	V	UL 746
High Voltage Arc Tracking Rate (HVTR)	14.0	18.0	mm/min	UL 746
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating ² (3.20 mm)	HB	--		UL 94
Optical	Dry	Conditioned	Unit	Test Method
Transmittance ³				ASTM D1003
1070 nm : 1.60 mm	> 20	--	%	ASTM D1003
940 nm : 1.60 mm	> 20	--	%	ASTM D1003
Injection	Dry	Unit		
Drying Temperature	120		°C	
Drying Time	4.0		hr	
Suggested Max Moisture	0.045		%	
Rear Temperature	318 - 324		°C	
Front Temperature	327 - 332		°C	
Processing (Melt) Temp	329 - 343		°C	
Mold Temperature	65.6 - 93.3		°C	
Injection instructions				

射出速度: 3~4英寸/秒 保压压力:射出压力的50%

NOTE

- 1500 hours
- These flammability ratings do not represent the risk of these materials or any other materials in actual fire situations.
- Light transmittance, natural color grade

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