Amodel® AS-4133 L
polyphthalamide

Amodel® AS-4133 L polyphthalamide (PPA) a 33% glass reinforced, lubricated, structural grade of polyphthalamide (PPA) that offers fast cycle times and is hot water moldable. Typical applications include electrical and electronic components.

- Black: AS-4133 L BK 324
- Black: AS-4133 L EI BK 324
- Natural: AS-4133 L NT

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement [1]	• Glass Fiber, 33% Filler by Weight	
Additive	• Lubricant	
Features	• Chemical Resistant • Creep Resistant • Fast Molding Cycle • Good Dimensional Stability • Good Stiffness	• High Strength • Hot Water Moldability • Low Moisture Absorption • Lubricated
Uses	• Automotive Applications • Automotive Electronics • Automotive Under the Hood • Cell Phones • Electrical/Electronic Applications • General Purpose • Housings	• Industrial Applications • Machine/Mechanical Parts • Metal Replacement • Power/Other Tools • Thick-walled Parts • Valves/Valve Parts
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• ASTM D6779 PA105G35	
Appearance	• Black	• Natural Color
Forms	• Pellets	
Processing Method	• Water-Heated Mold Injection Molding	

Physical	Dry	Conditioned	Unit	Test method
Density / Specific Gravity				
--	1.45	--		ASTM D792
--	1.45	--	g/cm³	ISO 1183/A
Molding Shrinkage				ASTM D955
Flow	0.50	--	%	
Across Flow	1.0	--	%	
Water Absorption [2] (24 hr, 23°C)	0.29	--	%	ASTM D570

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Mechanical	Dry	Conditioned	Unit	Test method
Tensile Modulus	11700	11700	MPa	ASTM D638
Tensile Strength (Break)	200	172	MPa	ASTM D638
Tensile Elongation (Break)	2.5	2.2	%	ASTM D638
Flexural Modulus	11000	11000	MPa	ASTM D790
Flexural Strength (Yield)	290	241	MPa	ASTM D790
Compressive Strength	179	172	MPa	ASTM D695
Shear Strength	90.0	75.8	MPa	ASTM D732
Poisson's Ratio	0.41	--		ASTM E132

Impact	Dry	Conditioned	Unit	Test method
Notched Izod Impact	80	69	J/m	ASTM D256
Unnotched Izod Impact	960	--	J/m	ASTM D4812

Thermal	Dry	Conditioned	Unit	Test method
Deflection Temperature Under Load				ASTM D648
0.45 MPa, Annealed, 3.18 mm	320	--	°C	
1.8 MPa, Annealed, 3.18 mm	300	--	°C	
Melting Temperature	320	--	°C	ASTM D3418 DSC
CLTE				ASTM E831
Flow : 0 to 90°C	2.2E-5	--	cm/cm/°C	
Flow : 149 to 249°C	1.4E-5	--	cm/cm/°C	
Transverse : 0 to 90°C	5.9E-5	--	cm/cm/°C	
Transverse : 149 to 249°C	1.2E-4	--	cm/cm/°C	

Electrical	Dry	Conditioned	Unit	Test method
Comparative Tracking Index (CTI)	600	600	V	UL 746A
High Voltage Arc Tracking Rate (HVTR)	14.0	18.0	mm/min	UL 746A

Flammability	Dry	Conditioned	Unit	Test method
Flame Rating [3] (3.2 mm)	HB	--		UL 94

Injection	Dry	Unit
Drying Temperature	120 to 135	°C
Drying Time	4.0	hr
Suggested Max Moisture	0.030 to 0.060	%
Rear Temperature	318 to 324	°C
Front Temperature	327 to 332	°C
Processing (Melt) Temp	329 to 343	°C
Mold Temperature	66 to 140	°C

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Injection Notes

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.

Notes

Typical properties: these are not to be construed as specifications.

[1] 31% to 35% glass content

[2] 0.29% typical, maximum 1.07%

[3] These flammability ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

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