

Amodel® HFZ A-4133L polyphthalamide

Amodel® HFZ A-4133 L polyphthalamide (PPA) is a 33% glass-reinforced, hot water moldable resin. Key properties include heat resistance, reduced outgassing and high strength and stiffness over a broad temperature range. It also displays low moisture absorption, excellent chemical resistance and excellent electrical properties.

Amodel® HFZ A-4133 L resin is ideal for automotive electrical and electronic applications, including

connectors, sockets, switches and sensors. It is also a good choice for under-hood enclosures that protect critical control systems such as anti-lock brakes, traction control, steering, electronic engine control, transmission and chassis control units.

- Black: HFZ A-4133 L BK 324
- Natural: HFZ A-4133 L NT

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 33% Filler by Weight	
Additive	• Lubricant	• Mold Release
Features	• Chemical Resistant • Creep Resistant • Fast Molding Cycle • Good Dimensional Stability • Good Stiffness • High Flow	• High Stiffness • High Strength • Hot Water Moldability • Low Moisture Absorption • Lubricated
Uses	• Automotive Applications • Automotive Electronics • Automotive Under the Hood • Bobbins/Spools • Camera Applications • Cell Phones • Connectors	• Electrical/Electronic Applications • General Purpose • Industrial Applications • Industrial Parts • Lawn & Garden Equipment • Machine/Mechanical Parts • Metal Replacement
RoHS Compliance	• RoHS Compliant	
Appearance	• Black	• Natural Color
Forms	• Pellets	
Processing Method	• Water-Heated Mold Injection Molding	

Physical	Typical Value	Unit	Test method
Density	1.46	g/cm ³	ISO 1183/A
Molding Shrinkage			ASTM D955
Flow	0.50	%	
Across Flow	1.0	%	
Water Absorption (24 hr)	0.26	%	ASTM D570

Amodel® HFZ A-4133L

polyphthalamide

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	12000	MPa	ISO 527-1
Tensile Stress (Break)	180	MPa	ISO 527-2
Tensile Strain (Break)	1.8	%	ISO 527-2
Flexural Modulus	11000	MPa	ISO 178
Flexural Stress	255	MPa	ISO 178

Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength	8.2	kJ/m ²	ISO 179/1eA
Notched Izod Impact Strength	8.4	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength	40	kJ/m ²	ISO 180/1U

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load 1.8 MPa, Unannealed	310	°C	ISO 75-2/A
Melting Temperature (DSC)	327	°C	ISO 3146
CLTE			ASTM E831
Flow : 0 to 90°C	2.0E-5	cm/cm/°C	
Flow : 150 to 250°C	1.4E-5	cm/cm/°C	
Transverse : 0 to 90°C	6.3E-5	cm/cm/°C	
Transverse : 150 to 250°C	1.5E-4	cm/cm/°C	

Electrical	Typical Value	Unit	Test method
Surface Resistivity	1.0E+16	ohms	ASTM D257
Volume Resistivity	1.0E+15	ohms·cm	ASTM D257
Dielectric Strength	19	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.90		
1 MHz	3.70		
Dissipation Factor			ASTM D150
60 Hz	6.0E-3		
1 MHz	0.016		
High Amp Arc Ignition (HAI)	PLC 0		UL 746A
High Voltage Arc Resistance to Ignition (HVAR)	PLC 0		UL 746A
High Voltage Arc Tracking Rate (HVTR)	PLC 0		UL 746A
Hot-wire Ignition (HWI)	PLC 1		UL 746A

Flammability	Typical Value	Unit	Test method
Flame Rating ¹ (0.8 mm)	HB		UL 94
Glow Wire Flammability Index	800	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	800	°C	IEC 60695-2-13

Amodel® HFZ A-4133L

polyphthalamide

Injection	Typical Value	Unit
Drying Temperature	120	°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 93	°C

Injection Notes

Injection Pressure: 3 to 4 in/sec

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



www.syensqo.com

Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

Neither Syensqo nor any of its affiliates makes any warranty, express or implied, including merchantability or fitness for use, or accepts any liability in connection with this product, related information or its use. Some applications of which Syensqo's products may be proposed to be used are regulated or restricted by applicable laws and regulations or by national or international standards and in some cases by Syensqo's recommendation, including applications of food/feed, water treatment, medical, pharmaceuticals, and personal care. Only products designated as part of the Solviva® family of biomaterials may be considered as candidates for use in implantable medical devices. The user alone must finally determine suitability of any information or products for any contemplated use in compliance with applicable law, the manner of use and whether any patents are infringed. The information and the products are for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right.

All trademarks and registered trademarks are property of the companies that comprise the Syensqo or their respective owners.

© 2024 2023 Syensqo. All rights reserved.