Amodel® A-1145 HS LZT
polyphthalamide

Amodel® A-1145 HS LZT is an NIR laser transmissive, 45% glass reinforced, heat stabilized polyphthalamide (PPA) with a high heat deflection temperature, very high flexural modulus and very high tensile strength. Excellent creep resistance and low moisture absorption are also characteristic of this resin. This grade is designed to be paired with other Amodel® black grades for black-on-black laser welding applications.

- Black: Amodel® A-1145 HS LZT BK 979

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 45% Filler by Weight	
Additive	• Heat Stabilizer	
Features	• Chemical Resistant • Creep Resistant • Good Dimensional Stability • Good Stiffness	• High Heat Resistance • High Strength • High Temperature Strength • Low Moisture Absorption
Uses	• Automotive Applications • Automotive Electronics • Automotive Under the Hood • Connectors • Housings • Industrial Applications	• Industrial Parts • Machine/Mechanical Parts • Metal Replacement • Power/Other Tools • Valves/Valve Parts
RoHS Compliance	• RoHS Compliant	
Appearance	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding	

Physical	Typical Value	Unit	Test method
Density	1.59	g/cm³	ISO 1183/A
Molding Shrinkage			ASTM D955
Flow	0.20	%	
Across Flow	0.60	%	
Water Absorption (24 hr)	0.12	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
--	17200	MPa	ASTM D638
23°C	16800	MPa	ISO 527-1

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Mechanical	Typical Value	Unit	Test method
Tensile Stress			
Break, 23°C	263	MPa	ISO 527-2
--	259	MPa	ASTM D638
Tensile Elongation			
Break	2.6	%	ASTM D638
Break, 23°C	2.7	%	ISO 527-2
Flexural Modulus			
--	13800	MPa	ASTM D790
23°C	15900	MPa	ISO 178
Flexural Strength			
--	363	MPa	ASTM D790
23°C	377	MPa	ISO 178

Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength (23°C)	10	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	92	kJ/m²	ISO 179/1eU
Notched Izod Impact			
--	110	J/m	ASTM D256
23°C	10	kJ/m²	ISO 180/1A
Unnotched Izod Impact			
--	1100	J/m	ASTM D4812
23°C	61	kJ/m²	ISO 180/1U

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			
0.45 MPa, Annealed, 3.20 mm	301	°C	ASTM D648
1.8 MPa, Unannealed	281	°C	ISO 75-2/A
1.8 MPa, Annealed, 3.20 mm	287	°C	ASTM D648
Peak Melting Temperature	310	°C	ASTM D3418

Optical	Typical Value	Unit	Test method
Light Transmittance (2000 µm, 940 nm)	38.0	%	ASTM D1003

Injection	Typical Value	Unit
Drying Temperature	120	°C
Drying Time	4.5	hr
Suggested Max Moisture	0.045	%
Rear Temperature	304 to 318	°C
Front Temperature	316 to 329	°C
Processing (Melt) Temp	321 to 343	°C
Mold Temperature	135	°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.