

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

Material Status	 Commercial: Active 			
Availability	 Africa & Middle East Asia Pacific Europe	Latin America North America		
Filler / Reinforcement	Glass Fiber, 45% Filler by Weigh	t		
Additive	Heat Stabilizer			
Features	Chemical ResistantCreep ResistantGood Dimensional StabilityGood Stiffness	High Heat ResistanceHigh StrengthHigh Temperature StrengthLow 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	poigyT	al Value Unit	Test method	
Density	/1	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	Турісс	al Value Unit	Test method	
Tensile Modulus				
		17200 MPa	ASTM D638	
23°C		16800 MPa	ISO 527-1	

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 15900 MPa ISO 178 Flexural Strength 363 MPa ASTM D790 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/lea Charpy Unnotched Impact Strength (23°C) 92 kJ/m² ISO 189/lea 1 110 J/m ASTM D256 23°C 10 kJ/m² ISO 189/lea 23°C 10 kJ/m² ISO 189/lea 1 110 J/m ASTM D256 23°C 10 kJ/m² ISO 189/lea 23°C 10 kJ/m² ISO 189/lea 110 J/m ASTM D48 23°C <t< th=""><th>Mechanical</th><th>Typical Value</th><th>Unit</th><th>Test method</th></t<>	Mechanical	Typical Value	Unit	Test method
Tensile Elongation Break 2.6 % ASTM D638 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 179 Impact Typical Value Unit Test method Charpy Notched Impact Strength (23°C) 10 kJ/m² ISO 179/leA Charpy Unnotched Impact Strength (23°C) 2 kJ/m² ISO 179/leA Notched Izod Impact 110 J/m ASTM D256 23°C 10 kJ/m² ISO 180/lA Unnotched Izod Impact 1100 J/m ASTM D4812 23°C 1100 J/m² ASTM D4812 23°C 1100 J/m² ASTM D4812 23°C 16 kJ/m² ISO 180/lu Thermal Typical Value Unit Test method Deflection Temperature Under Load 281 °C ASTM D648 1.8 MPa, Annealed, 3.20 mm 301 °C	Tensile Stress			
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Break		259	MPa	ASTM D638
Break, 23°C 2.7 % ISO 527-2 Flexural Modulus 13800 MPa ASTM D790 23°C 15900 MPa ISO 178 Flexural Strength 23°C 363 MPa ASTM D790 23°C 377 MPa ISO 178 Impact Typical Value Unit Test method Charpy Notched Impact Strength (23°C) 92 kJ/m² ISO 179/lea Charpy Unnotched Impact Strength (23°C) 92 kJ/m² ISO 179/lea Charpy Unnotched Impact Strength (23°C) 92 kJ/m² ISO 179/lea Notched Izod Impact 100 kJ/m² ISO 180/la Unnotched Izod Impact	Tensile Elongation			
Flexural Modulus	Break	2.6	%	ASTM D638
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1590 MPa 150 178	Flexural Modulus			
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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	Eight Transmittance (2000 µm, 940 mm)	30.0	/0	ASTIVI DIOUS
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	Injection	Typical Value	Unit	
Suggested Max Moisture0.045 %Rear Temperature304 to 318 °CFront Temperature316 to 329 °CProcessing (Melt) Temp321 to 343 °C	Drying Temperature	120	°C	
Rear Temperature 304 to 318 °C Front Temperature 316 to 329 °C Processing (Melt) Temp 321 to 343 °C	Drying Time	4.5	hr	
Front Temperature 316 to 329 °C Processing (Melt) Temp 321 to 343 °C	Suggested Max Moisture	0.045	%	
Processing (Melt) Temp 321 to 343 °C	Rear Temperature	304 to 318	°C	
Processing (Melt) Temp 321 to 343 °C	Front Temperature	316 to 329	°C	
	Processing (Melt) Temp	321 to 343	°C	
	-	135	°C	

Amodel^a A-1145 HS LZT polyphthalamide

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.

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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.

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