Amodel® AT-1001L

polyphthalamide

Amodel® AT-1001L is an unreinforced, impact modified polyphthalamide (PPA) resin that exhibits exceptional impact strength at temperatures ranging from room temperature to as low as -40°F (-40°C), which suggests possible applications in ski boots and hockey skates.

In addition, its chemical and wear resistance, combined with good mechanical properties, make Amodel® AT-1001L resin a prime candidate for applications such as anti-friction and wear resistant components, chemical, oil field, automotive and safety equipment.

- Natural: AT-1001 L NT

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Additive	• Impact Modifier • Lubricant	• Mold Release
Features	• Chemical Resistant • Ductile • Hot Water Moldability • Impact Modified	• Low Temperature Impact Resistance • Low Warpage • Lubricated • Wear Resistant
Uses	• Automotive Applications • Automotive Electronics • General Purpose • Housings • Industrial Applications	• Industrial Parts • Machine/Mechanical Parts • Metal Replacement • Oil/Gas Applications
RoHS Compliance	• Contact Manufacturer	
Automotive Specifications	• ASTM D5336 PPA0110A01080 Color: NT Natural	
Appearance	• Natural Color	
Forms	• Pellets	
Processing Method	• Injection Molding	• Water-Heated Mold Injection Molding

Physical	Typical Value	Unit	Test method
Density	1.11	g/cm³	ISO 1183/A
Molding Shrinkage			ASTM D955
Flow	1.7 to 2.2	%	
Across Flow	1.9 to 2.1	%	
Water Absorption (24 hr)	0.75	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	1900	MPa	ASTM D638
Tensile Strength (Break)	62.1	MPa	ASTM D638
Tensile Elongation			ASTM D638
Yield	6.0	%	
Break	30	%	
Flexural Modulus	2210	MPa	ASTM D790

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Mechanical	Typical Value	Unit	Test method
Flexural Strength	96.5	MPa	ASTM D790
Poisson's Ratio	0.35		ASTM E132

Impact	Typical Value	Unit	Test method
Notched Izod Impact			ASTM D256
-40°C	750	J/m	
23°C	1100	J/m	

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Annealed, 3.18 mm	120	°C	
Melting Temperature	310	°C	

Additional Information

Penetration Impact, ASTM D3763, 73°F, Maximum Load: 1100 lbs
Penetration Impact, ASTM D3763, 73°F, Total Energy Absorbed: 40 ft-lbs
Penetration Impact, ASTM D3763, 73°F, Energy to Maximum Load: 30 ft-lbs
Penetration Impact, ASTM D3763, -10°F, Total Energy Absorbed: 40 ft-lbs
Penetration Impact, ASTM D3763, -10°F, Maximum Load: 1260 lbs
Penetration Impact, ASTM D3763, -10°F, Energy to Maximum Load: 30 ft-lbs

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Injection	Typical Value	Unit
Drying Temperature	110	°C
Drying Time	4.0	hr
Suggested Max Moisture	0.045	%
Hopper Temperature	79	°C
Rear Temperature	304 to 318	°C
Front Temperature	316 to 329	°C
Processing (Melt) Temp	321 to 343	°C
Mold Temperature	> 135	°C

Injection Notes

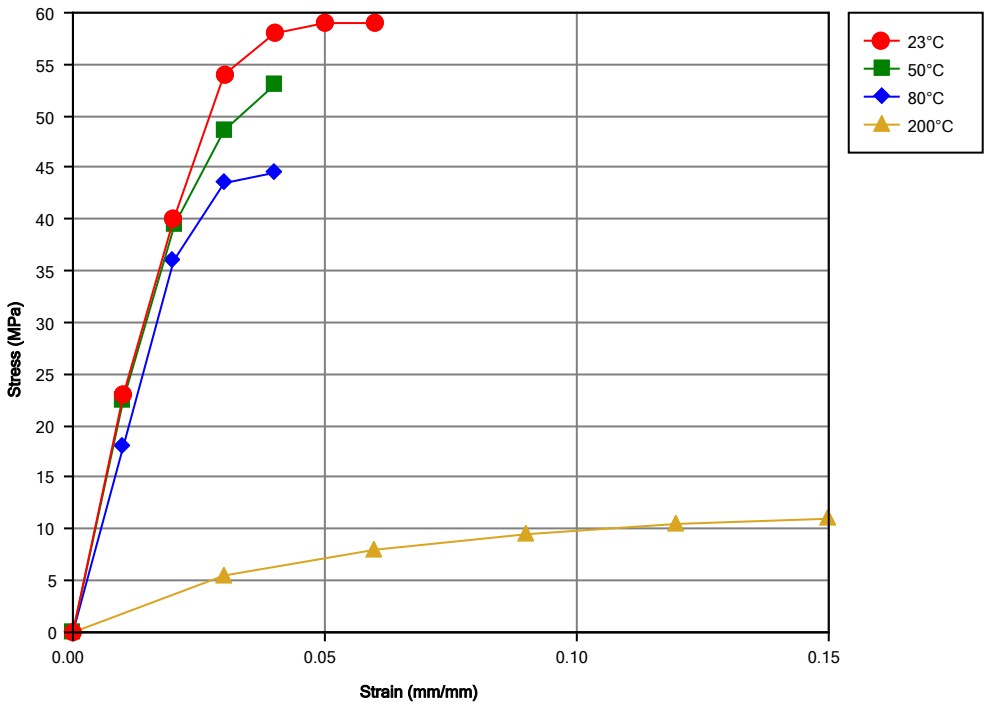
MOLD TEMPERATURE

- If the wall is thick, lower temperatures may be used to prevent ejector pin problems.

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.

Isothermal Stress vs. Strain (ISO 11403-1)



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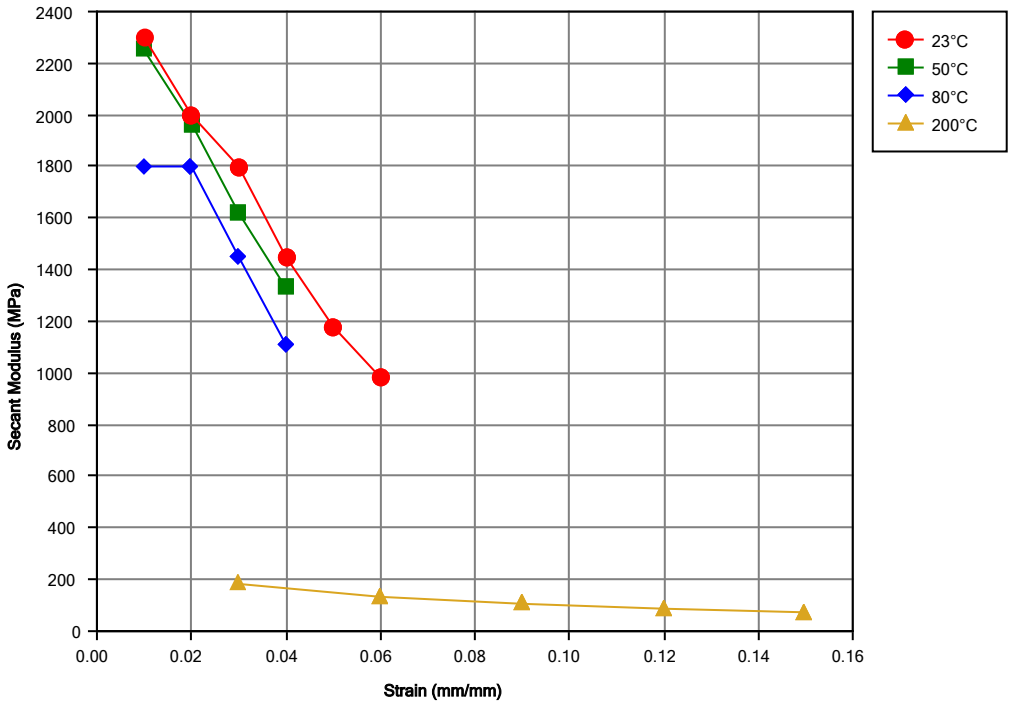
Secant Modulus vs. Strain (ISO 11403-1)



Notes

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

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