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

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

Injection	Typical Value	Unit
Drying Temperature	110	°C
Drying Time	4.0	hr
Suggested Max Moisture	0.030 to 0.060	%
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

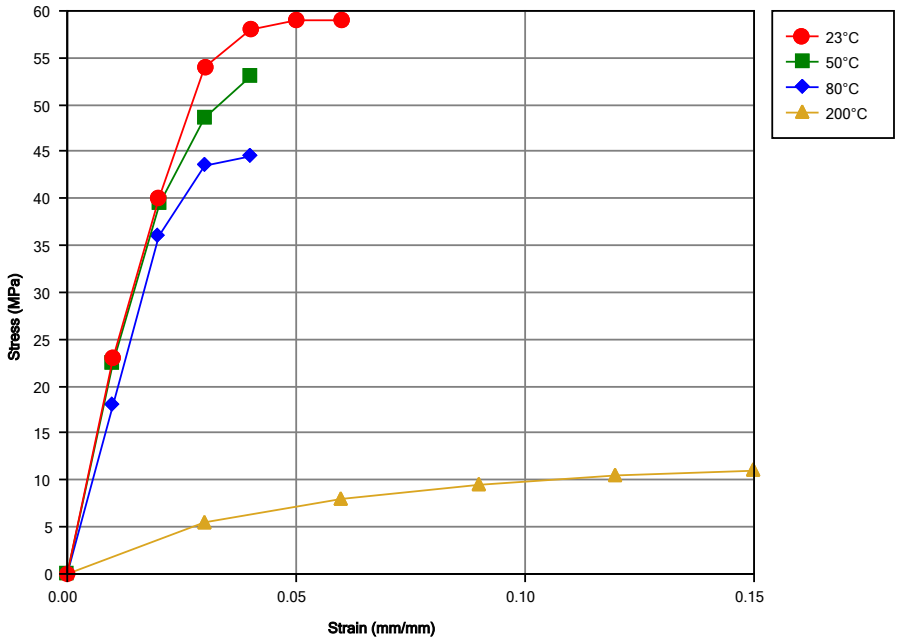
MOLD TEMPERATURE

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

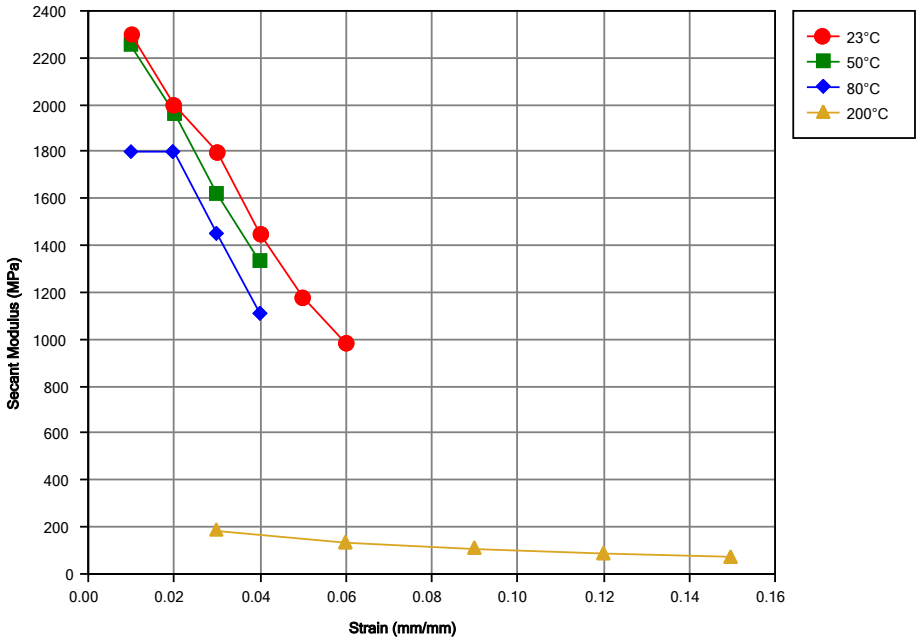
STORAGE

- 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)



Secant Modulus vs. Strain (ISO 11403-1)



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Notes

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

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