

LATAMID 6 BH

Compound based on Polyamide 6 (PA 6). Low viscosity. Heat stabilized. PFAS-free product.

Versions of product mentioned herein are suitable for applications in contact with foodstuffs within the conditions permitted by the material, or for toy manufacturing. Nevertheless, manufactured parts have to be verified according to the specific directives.

The products mentioned herein are not suitable for applications in the pharmaceutical, medical or dental sector.

PHYSICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
Density	ISO 1183	1.13 g/cm ³
Linear shrinkage at moulding		
Longitudinal (0.078in/8,700psi)	ISO 294-4	1.05 ÷ 1.35 %
Transversal (0.078in/8,700psi)	ISO 294-4	1.15 ÷ 1.40 %
Dimensional stability	---	72
Moisture absorption		
saturation, in air	ISO 62-4	2.50 %
MECHANICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
CHARPY impact strength		
Unnotched, at 23°F	ISO 179-1eU	NB ft.lb/in ²
Unnotched, at -20°F	ISO 179-1eU	NB ft.lb/in ²
Notched, at +23°F	ISO 179-1eA	1.6 ft.lb/in ²
Notched, at +-20°F	ISO 179-1eA	1.4 ft.lb/in ²
MECHANICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
Tensile elongation		
At yield (0.196 in/min), 23°F	ISO 527	3.5 %
At yield (0.196 in/min), 60°F	ISO 527	>10 %
At yield (0.196 in/min), 90°F	ISO 527	>10 %
At yield (0.196 in/min), 120°F	ISO 527	>10 %
At yield (0.196 in/min), 150°F	ISO 527	>10 %
At break (0.196 in/min), 23°F	ISO 527	30.0 %
At break (0.196 in/min), 60°F	ISO 527	>50 %
At break (0.196 in/min), 90°F	ISO 527	>50 %
At break (0.196 in/min), 120°F	ISO 527	>50 %
At break (0.196 in/min), 150°F	ISO 527	>50 %
Tensile strength		
At yield (0.196 in/min), 23°F	ISO 527	11250 psi
At yield (0.196 in/min), 60°F	ISO 527	3625 psi
At yield (0.196 in/min), 90°F	ISO 527	2900 psi
At yield (0.196 in/min), 120°F	ISO 527	2175 psi
At yield (0.196 in/min), 150°F	ISO 527	1450 psi
At break (0.196 in/min), 23°F	ISO 527	11250 psi
At break (0.196 in/min), 60°F	ISO 527	NB psi
At break (0.196 in/min), 90°F	ISO 527	NB psi
At break (0.196 in/min), 120°F	ISO 527	NB psi
At break (0.196 in/min), 150°F	ISO 527	NB psi

LATAMID 6 BH

MECHANICAL PROPERTIES	STANDARD	VALUE	MEASURE UNITS
Elastic modulus			
Tensile (0.04 in/min), 23°F	ISO 527	435	kpsi
Tensile (0.04 in/min), 60°F	ISO 527	94	kpsi
Tensile (0.04 in/min), 90°F	ISO 527	58	kpsi
Tensile (0.04 in/min), 120°F	ISO 527	51	kpsi
Tensile (0.04 in/min), 150°F	ISO 527	44	kpsi
THERMAL PROPERTIES			
Coefficient of linear thermal expansion (CLTE)			
30°F to 100°F (longitudinal)	ISO 11359	90 × 10 ⁻⁶	K ⁻¹
30°F to 100°F (transversal)	ISO 11359	90 × 10 ⁻⁶	K ⁻¹
VICAT - Softening point			
11 lb (heating rate 250°F/h)	ISO 306	392	°F
HDT - Heat Deflection Temperature			
66 psi	ISO 75	329	°F
264 psi	ISO 75	140	°F
Thermal conductivity			
in plane	ASTM E 1461-92	1.8	W/(m·K)
through plane	ASTM E 1461-92	1.8	W/(m·K)
FLAMMABILITY			
Oxygen Index			
	ASTM D 2863	23	%
Flammability rating			
0.125 in. thickness	UL 94	V-2	
0.030 in. thickness	UL 94	V-2	
ELECTRICAL PROPERTIES			
Electrical resistivity			
surface, dry	ASTM D 257 / D 4496	1E12	ohm
Dielectric strength (short period)			
0.078 in. thickness, 73°F, dry	ASTM D 149	457	kV/mm

STORAGE

Best storage conditions of sealed, undamaged packages are warm environmental temperature in dry storage facilities able to protect from weather and accidental damage. PAY ATTENTION! Material is prone to absorb moisture.

HANDLING AND SAFETY

Detailed information about a safe treatment of the material are indicated in the "Material Safety Data Sheet" (MSDS) furnished with the first material supply. The MSDS may be also sent again in case of loss.

PREDRYING CONDITIONS (Hot-air dryer)

Predrying needed. Predrying conditions are: at least 2 hours at $160 \div 195^{\circ}\text{F}$. Increase time in case of damp material. Maximum suggested moisture content: 0.15%. Use of desiccant dryers or vacuum ovens allows a reduction in drying time. Vacuum ovens, desiccant dryers or forced ventilation ovens are suggested. Wet material appears darker.

BARREL TEMPERATURE PROFILE

Suggested barrel temperature profile (zone 1 - zone 2 - zone 3 - nozzle): $455-465-475-475^{\circ}\text{F}$.

RESIDENCE TIME

Maximum allowable residence time: $8 \div 10$ minutes. Do not exceed this limit. Maximum number of complete shots (in the barrel) suggested: $2 \div 8$

MELT TEMPERATURE

Suggested range of melt temperature: $445 \div 480^{\circ}\text{F}$. On small machines, running short cycles, it is possible to use higher melt temperatures to improve plastification, fluidity and surface appearance, paying attention to any indication of material degradation. PAY ATTENTION! Do not exceed the suggested maximum temperature.

MOLD TEMPERATURE

Suggested range of mold temperature: $140 \div 195^{\circ}\text{F}$. This can be significantly different from the tool settings, due to the cooling system efficiency and the accuracy of the temperature control on the tool. If molding temperature is lower than suggested, part annealing may be necessary. High mould temperature is suggested. Low mold temperature is suggested.

INJECTION SPEED

Advisable injection speed: medium to high. Best results are achieved by using an injection profile. Low injection speed improve surface appearance.

TANGENTIAL SCREW VELOCITY (V)

Maximum suggested tangential velocity (V): $1.00 \div 1.30$ fps. The maximum rotational speed may be calculated by means of the following equation: $\text{rpm} = S/d \cdot 229$, where d is the screw diameter (in).

INJECTION PRESSURE

Maximum advisable injection pressure at nozzle: $70 \div 140$ MPa. Please, check on manual of injection molding machine the ratio between specific pressure (at nozzle) and hydraulic pressure (of oil).

PACKING PRESSURE

Typical suggested packing pressure (at nozzle): $50 \div 60\%$ of injection pressure.

CUSHION

Minimum suggested cushion: $0.10 \div 0.30$ in.

BACK PRESSURE

Suggested backpressure: $45 \div 220$ psi (hydraulic pressure).

REGRIND USAGE

Maximum suggested regrind percentage: 15%. In-loop regrind is suggested. Regrind must be dried. Unless otherwise specified in yellow card, UL guidelines allow up to 25% regrind to be used without affecting the rating. Otherwise, it is recommended that Customer downloads the yellow card and attaches it to this documentation. In any case, LATI advises not to use more than 15%.

VALVE GATES / SMALL GATES

Valve gates or small injection gates can be used.

MATERIAL HANDLING

Pneumatic conveyor systems should be avoided to prevent the separation of the steel bundles from the base resin. Avoid use of pneumatic conveyor systems or forced air dryers to prevent separation between resin and additives.

EQUIPMENT WEAR AND CORROSION

Usually, critical processing conditions (high injection rate, high back pressure and high screw rotating speed, etc.) and/or disadvantageous geometric conditions (low wall thickness, low diameters, sharp fillet radius, etc.) generate wear on equipment. Wear increases in case of filled materials (particularly fibers filled ones). Appropriate surface treatments of equipment are suggested in these cases, as well as a proper venting to avoid material overheating. Steel types containing a high chrome percentage (Cr > 13%) or a specific surface treatment (e.g. Chrome or Nickel electroplating) are suggested. Standard steel can be used to make the mold.

APPROVALS

Please, check our site or contact LATI for details.

CONTACTS

LATI Industria Termoplastici S.p.A.