# LATAMID 6 H2 G/20-V2HF

Compound based on Polyamide 6 (PA 6). Improved thermal stabilisation. Glass fibres. Flame retardant, UL94 V-2 class, free of halogens-based flame retardants and red phosphorous. PFAS-free product.

The products mentioned herein are not suitable for applications in contact with foodstuffs or for potable water transportation, or for toy manufacturing.

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 | **1.32** | g/cm³ |
| **Linear shrinkage at moulding** | | | |
| Longitudinal (2.0mm/60MPa) | ISO 294-4 | **0.70 ÷ 1.00** | % |
| Transversal (2.0mm/60MPa) | ISO 294-4 | **0.70 ÷ 1.00** | % |
| **Dimensional stability** | --- | **78** | |
| **Moisture absorption** | | | |
| saturation, in air | ISO 62-4 | **2.20** | % |

| MECHANICAL PROPERTIES | STANDARD | VALUE | MEASURE UNITS |
|---|---|---|---|
| **CHARPY impact strength** | | | |
| Unnotched, at 23°C | ISO 179-1eU | **35.0** | kJ/m² |
| Notched, at 23°C | ISO 179-1eA | **3.4** | kJ/m² |

| MECHANICAL PROPERTIES | STANDARD | VALUE | MEASURE UNITS |
|---|---|---|---|
| **Tensile elongation** | | | |
| At break (5 mm/min), 23°C | ISO 527 | **3.2** | % |
| **Tensile strength** | | | |
| At break (5 mm/min), 23°C | ISO 527 | **65** | MPa |
| **Elastic modulus** | | | |
| Tensile (1 mm/min), 23°C | ISO 527 | **4600** | MPa |

| THERMAL PROPERTIES | STANDARD | VALUE | MEASURE UNITS |
|---|---|---|---|
| **Coefficient of linear thermal expansion (CLTE)** | | | |
| 30°C to 100°C (longitudinal) | ISO 11359 | **60** | $\times 10^{-6}$ K$^{-1}$ |
| 30°C to 100°C (transversal) | ISO 11359 | **70** | $\times 10^{-6}$ K$^{-1}$ |
| **VICAT - Softening point** | | | |
| 50 N (heating rate 120°C/h) | ISO 306 | **200** | °C |
| **HDT - Heat Deflection Temperature** | | | |
| 0.45 MPa | ISO 75 | **200** | °C |
| 1.81 MPa | ISO 75 | **165** | °C |
| **Thermal conductivity** | | | |
| in plane | ASTM E 1461-92 | **0.3** | W/(m·K) |
| through plane | ASTM E 1461-92 | **0.3** | W/(m·K) |

| FLAMMABILITY | STANDARD | VALUE | MEASURE UNITS |
|---|---|---|---|
| **Oxygen Index** | ASTM D 2863 | **28** | % |
| **Flammability rating** | | | |
| 3 mm thickness | UL 94 | **V-2** | |
| 1.5 mm thickness | UL 94 | **V-2** | |
| 0.75 mm thickness | UL 94 | **V-2** | |

# LATAMID 6 H2 G/20-V2HF

| FLAMMABILITY | STANDARD | VALUE | MEASURE UNITS |
|---|---|---|---|
| **GWFI - Glow Wire Flammability Index** | | | |
| 2 mm thickness | IEC 60695-2-12 | **960** | °C |
| 1.5 mm thickness | IEC 60695-2-12 | **960** | °C |
| 1 mm thickness | IEC 60695-2-12 | **960** | °C |

| FLAMMABILITY | STANDARD | VALUE | MEASURE UNITS |
|---|---|---|---|
| **GWIT - Glow Wire Ignition Test** | | | |
| 2 mm thickness | IEC 60695-2-13 | **725** | °C |
| 1.5 mm thickness | IEC 60695-2-13 | **725** | °C |
| 1 mm thickness | IEC 60695-2-13 | **725** | °C |

| ELECTRICAL PROPERTIES | STANDARD | VALUE | MEASURE UNITS |
|---|---|---|---|
| **CTI - Comparative Tracking Index** | | | |
| solution A (without surfactant) | IEC 60112 | **550** | V |
| **Electrical resistivity** | | | |
| surface, dry | ASTM D 257 / ASTM D4496 | **1E12** | ohm |
| **Dielectric strength (short period)** | | | |
| 2 mm thickness, 23°C, dry | ASTM D 149 | **21** | kV/mm |

# LATAMID 6 H2 G/20-V2HF - Moulding parameters

## 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 70 ÷ 90°C. Increase time in case of wet material. Maximum suggested moisture content: 0.1%. Use of desiccant dryers or vacuum ovens allows a reduction in drying time.

## BARREL TEMPERATURE PROFILE

Suggested barrel temperature profile (zone 1 - zone 2 - zone 3 - nozzle): 240-245-250-250°C.

## RESIDENCE TIME

Maximum allowable residence time: 3 ÷ 4 minutes. Do not exceed this limit. Maximum number of complete shots (in the barrel) suggested: 1 ÷ 4

## MELT TEMPERATURE

Suggested range of melt temperature: 240 ÷ 250°C. 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.

## MOULD TEMPERATURE

Suggested range of mould temperature: 60 ÷ 90°C. 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 moulding temperature is lower than suggested, part annealing may be necessary.

## INJECTION SPEED

Advisable injection speed: medium. Best results are achieved by using an injection profile.

## TANGENTIAL SCREW VELOCITY (V)

Maximum suggested tangential velocity (V): 0.1 ÷ 0.2 m/s. The maximum rotational speed (in rpm) may be calculated by means of the following equation: rpm = V/d*19100, where d is the screw diameter (mm).

## INJECTION PRESSURE

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

## PACKING PRESSURE

Typical suggested packing pressure (at nozzle): 50 ÷ 60% of injection pressure.

## CUSHION

Minimum suggested cushion: 3 ÷ 8 mm.

## BACK PRESSURE

Suggested backpressure: 3 ÷ 15 bar (hydraulic pressure).

## REGRIND USAGE

Maximum suggested regrind percentage: 15%. In-loop regrind is suggested. Regrind must be dried.

## HOT RUNNER MOULDS

Hot runner moulds has to be evaluated, but usually can be used, if a tight temperature control is assured, cross-section area thicknesses are adequate and cycle time is short.

## VALVE GATES / SMALL GATES

Use of valve gates or small injection gates has to be evaluated due to risk of thermal degradation.

## 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 fibres 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. It is advisable to use a wear- and corrosion-resistant steel to make the mould.
**Check the proper "Moulding guide" for further details.**

## APPROVALS

**Please, check our site or contact LATI for details.**

## CONTACTS

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*Values shown are based on testing of specimens obtained through a manufacturing process, conditioned according to the standard and represent data that fall within the standard range of properties for non-coloured material, if not otherwise specified. As they may be subject to variations, these values do not represent a sufficient basis for any part design and are not intended for use in establishing values for specification purposes. Properties of manufactured parts can be influenced by a wide range of factors including, but not limited to, colorants, part design, processing equipment, processing conditions, post-treatment conditions, environmental conditions and usage of regrind during the transformation process. If data are explicitly indicated as provisional, range of properties has to be considered wider. This information and technical assistance are provided as a convenience for informational purposes only and are subject to change without notice. The customer shall always ensure that the latest release of technical information is at his own disposal. Lati S.p.A. extends no warranties or guarantee, including a warranty of merchantability of whatever use is made of the product, and make no representations as to the accuracy, suitability, reliability, completeness and sufficiency of the information provided, and assume no responsibility regarding the consequences of its use or for any printing errors. It is the customer's responsibility to inspect and test our products in order to determine to his own satisfaction whether they are suitable for his intended uses and applications or used in conjunction with third-party materials. This application-specific analysis shall at least include preliminary testing to determine the suitability for the customer's particular purpose from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us as the manner in which the customer uses and the purpose to which utilises our products are beyond our control. Lati S.p.A. does not accept and hereby disclaims liability for any damages whatsoever in connection with the use of or reliance on this information. No one is authorised to make any warranties, issue any immunities or assume any liabilities on behalf of Lati S.p.A. except in a writing signed by a specifically authorised Lati S.p.A. executive. Unless otherwise agreed in writing, the exclusive remedy for all claims is replacement of the product or refund of the purchase price at Lati's option, and in no event shall Lati S.p.A. be liable for special, consequential, incidental, punitive or exemplary damages. No information herein can be considered as a suggestion to use any product in conflict with intellectual property rights. Lati S.p.A. disclaims any liability that may be claimed for infringement or alleged infringement of patents. Unless specifically stated in writing, the products mentioned herein are not suitable for applications in the pharmaceutical, medical or dental sector, and toys manufacturing, in contact with foodstuff or for potable water transportation. For any other issues Lati S.p.A. Conditions of Sales apply.*

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