

# LATENE 9H TES/30

Compound based on Polypropylene homopolymer (PPh). Heat stabilized. Aesthetic talc. PFAS-free product.

Versions of product mentioned herein are suitable for applications in contact with foodstuffs 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
<b>Density</b>	ISO 1183	1.14 g/cm <sup>3</sup>
<b>Linear shrinkage at moulding</b>		
Longitudinal (0.078in/8,700psi)	ISO 294-4	0.85 ÷ 1.05 %
Transversal (0.078in/8,700psi)	ISO 294-4	0.90 ÷ 1.15 %
<b>Dimensional stability</b>	---	74
<b>Moisture absorption</b>		
saturation, in air	ISO 62-4	0.05 %
MECHANICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
<b>CHARPY impact strength</b>		
Unnotched, at 23°F	ISO 179-1eU	25.0 ft.lb/in <sup>2</sup>
Unnotched, at -20°F	ISO 179-1eU	7.0 ft.lb/in <sup>2</sup>
Notched, at +23°F	ISO 179-1eA	1.4 ft.lb/in <sup>2</sup>
Notched, at +-20°F	ISO 179-1eA	0.7 ft.lb/in <sup>2</sup>
MECHANICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
<b>Tensile elongation</b>		
At yield (0.196 in/min), 23°F	ISO 527	4.0 %
At yield (0.196 in/min), 60°F	ISO 527	5.0 %
At yield (0.196 in/min), 90°F	ISO 527	6.0 %
At break (0.196 in/min), 23°F	ISO 527	30.0 %
At break (0.196 in/min), 60°F	ISO 527	70.0 %
At break (0.196 in/min), 90°F	ISO 527	>50 %
<b>Tensile strength</b>		
At yield (0.196 in/min), 23°F	ISO 527	3625 psi
At yield (0.196 in/min), 60°F	ISO 527	2175 psi
At yield (0.196 in/min), 90°F	ISO 527	1450 psi
At break (0.196 in/min), 23°F	ISO 527	2900 psi
At break (0.196 in/min), 60°F	ISO 527	1450 psi
At break (0.196 in/min), 90°F	ISO 527	NB psi
<b>Elastic modulus</b>		
Tensile (0.04 in/min), 23°F	ISO 527	390 kpsi
Tensile (0.04 in/min), 60°F	ISO 527	180 kpsi
Tensile (0.04 in/min), 90°F	ISO 527	94 kpsi

# LATENE 9H TES/30

THERMAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
<b>Coefficient of linear thermal expansion (CLTE)</b>		
30°F to 100°F (longitudinal)	ISO 11359	90 × 10 <sup>-6</sup> K <sup>-1</sup>
30°F to 100°F (transversal)	ISO 11359	95 × 10 <sup>-6</sup> K <sup>-1</sup>
<b>VICAT - Softening point</b>		
11 lb (heating rate 250°F/h)	ISO 306	221 °F
<b>HDT - Heat Deflection Temperature</b>		
66 psi	ISO 75	221 °F
264 psi	ISO 75	149 °F
<b>Thermal conductivity</b>		
in plane	ASTM E 1461-92	1.7 W/(m·K)
through plane	ASTM E 1461-92	1.5 W/(m·K)
<b>FLAMMABILITY</b>		
<b>Flammability rating</b>		
0.060 in. thickness	UL 94	HB
<b>ELECTRICAL PROPERTIES</b>		
<b>Electrical resistivity</b>		
surface, dry	ASTM D 257 / ASTM D4496	1E12 ohm
<b>Dielectric strength (short period)</b>		
0.078 in. thickness, 73°F, dry	ASTM D 149	965 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.

#### 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 175 ÷ 195°F. Increase time in case of damp material. Maximum suggested moisture content: 0.03%. 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): 400-420-430-435°F.

#### RESIDENCE TIME

Maximum allowable residence time: 10 minutes. Do not exceed this limit. Maximum number of complete shots (in the barrel) suggested: 3 ÷ 8

#### MELT TEMPERATURE

Suggested range of melt temperature: 410 ÷ 445°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.

#### MOLD TEMPERATURE

Suggested range of mold temperature: 85 ÷ 120°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.

#### INJECTION SPEED

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

#### TANGENTIAL SCREW VELOCITY (V)

Maximum suggested tangential velocity (V): 0.35 ÷ 0.65 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: 50 ÷ 130 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): 60 ÷ 85% of injection pressure.

#### CUSHION

Minimum suggested cushion: 0.15 ÷ 0.30 in.

#### BACK PRESSURE

Suggested backpressure: 45 ÷ 290 psi (hydraulic pressure).

#### REGRIND USAGE

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

#### HOT RUNNER MOLDS

Hot runner molds can be used when a very tight temperature control is assured.

#### **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 fibers filled ones). Appropriate surface treatments of equipment are suggested in these cases, as well as a proper venting to avoid material overheating. It is advisable to use a wear-resistant steel to make the mold.

**Check the proper "Molding guide" for further details.**

#### **APPROVALS**

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

#### **CONTACTS**

**LATI Industria Termoplastici S.p.A.**