

## LATILUB 75/4-05T G/30-V0

Self-lubricating product based on Polybutylene Terephthalate (PBT). PTFE. Glass fibres. Flame retardant, UL94 V-0 class, with brominated flame retardants, free of PBB/PBDE.

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
<b>Density</b>	ISO 1183	1.63 g/cm <sup>3</sup>
<b>Linear shrinkage at moulding</b>		
Longitudinal (2.0mm/60MPa)	ISO 294-4	0.35 ÷ 0.50 %
Transversal (2.0mm/60MPa)	ISO 294-4	0.95 ÷ 1.25 %
<b>Dimensional stability</b>	---	70
<b>Moisture absorption</b>		
saturation, in air	ISO 62-4	0.14 %
MECHANICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
<b>CHARPY impact strength</b>		
Unnotched, at 23°C	ISO 179-1eU	45.0 kJ/m <sup>2</sup>
Notched, at 23°C	ISO 179-1eA	10.0 kJ/m <sup>2</sup>
MECHANICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
<b>Tensile elongation</b>		
At break (5 mm/min), 23°C	ISO 527	2.6 %
<b>Tensile strength</b>		
At break (5 mm/min), 23°C	ISO 527	110 MPa
<b>Elastic modulus</b>		
Tensile (1 mm/min), 23°C	ISO 527	9500 MPa
THERMAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
<b>Coefficient of linear thermal expansion (CLTE)</b>		
30°C to 100°C (longitudinal)	ISO 11359	30 × 10 <sup>-6</sup> K <sup>-1</sup>
30°C to 100°C (transversal)	ISO 11359	65 × 10 <sup>-6</sup> K <sup>-1</sup>
<b>VICAT - Softening point</b>		
50 N (heating rate 120°C/h)	ISO 306	200 °C
<b>HDT - Heat Deflection Temperature</b>		
0.45 MPa	ISO 75	215 °C
1.81 MPa	ISO 75	195 °C
FLAMMABILITY	STANDARD	VALUE MEASURE UNITS
<b>Oxygen Index</b>	ASTM D 2863	28 %
<b>Flammability rating</b>		
3 mm thickness	UL 94	V-0
1.5 mm thickness	UL 94	V-0
0.75 mm thickness	UL 94	HB
<b>GWFI - Glow Wire Flammability Index</b>		
2 mm thickness	IEC 60695-2-12	960 °C

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## FLAMMABILITY

### GWIT - Glow Wire Ignition Test

2 mm thickness

1 mm thickness

## STANDARD

IEC 60695-2-13

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## VALUE MEASURE UNITS

**725** °C

**725** °C

## ELECTRICAL PROPERTIES

### CTI - Comparative Tracking Index

solution A (without surfactant)

### Electrical resistivity

surface, dry

### Dielectric strength (short period)

2 mm thickness, 23°C, dry

## STANDARD

IEC 60112

ASTM D 257 / ASTM D4496

ASTM D 149

## VALUE MEASURE UNITS

**250** V

**1E12** ohm

**20** kV/mm

## TRIBOLOGICAL PROPERTIES

### Wear Factor

### Friction Coefficient

static

dynamic

## STANDARD

LATI (ISO 7148-2)

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## VALUE MEASURE UNITS

**100** 10<sup>-8</sup>(mm<sup>3</sup>/N m)

**0.30**

**0.34**

#### 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 3 hours at  $90 \div 120^{\circ}\text{C}$ . Increase time in case of wet material. Maximum suggested moisture content: 0.05%. 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): 240-250-255-250°C.

#### RESIDENCE TIME

Maximum allowable residence time: 3 ÷ 5 minutes. Do not exceed this limit. Maximum number of complete shots (in the barrel) suggested: 1 ÷ 3

#### MELT TEMPERATURE

Suggested range of melt temperature:  $235 \div 250^{\circ}\text{C}$ . 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:  $60 \div 90^{\circ}\text{C}$ . 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):  $0.1 \div 0.2 \text{ m/s}$ . The maximum rotational speed (in rpm) may be calculated by means of the following equation:  $\text{rpm} = V/d * 19100$ , where d is the screw diameter (mm).

#### INJECTION PRESSURE

Maximum advisable injection pressure at nozzle:  $70 \div 110 \text{ MPa}$ . 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):  $60 \div 80\%$  of injection pressure.

#### CUSHION

Minimum suggested cushion:  $3 \div 6 \text{ mm}$ .

#### BACK PRESSURE

Suggested backpressure:  $3 \div 10 \text{ bar}$  (hydraulic pressure).

#### REGRIND USAGE

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

#### HOT RUNNER MOULDS

Hot runner moulds are not recommended, and their usage should be evaluated with LATI Technical Service.

#### **VALVE GATES / SMALL GATES**

Use of valve gates or small injection gates is not recommended 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**

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