



# LAPEX A

Based on PES (Polyethersulphone)

## Key benefits:

- **Good mechanical properties**
- **High HDT**
- **Very high continuous use temperature**
- **Low creep**
- **Good chemical resistance**
- **Suitable for contact with food and potable water**
- **Excellent hydrolytic stability**
- **Transparent amber colour (base resin)**
- **Wide colour range**
- **Inherently self-extinguishing**

LAPEX A is an amorphous polymer with a transparent yellowish tint.

It has excellent dimensional stability and good electrical insulation properties. It provides outstanding thermal resistance, high heat deflection temperature, thermal stability for extended use, excellent toughness and exceptional creep resistance.

LAPEX A features superior resistance to hydrolysis, therefore it is suitable for applications with steam and boiling water.

It is self-extinguishing without the need for flame-retardant additives.

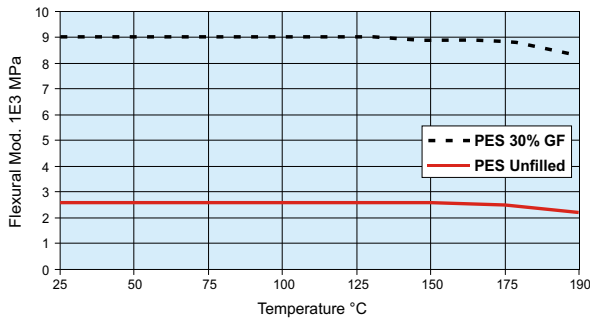
Nonetheless, to prevent or reduce internal stresses which may cause micro-cracking or failure in the long term, careful design and correct moulding are required.

LATI is willing to share with you its expertise in this field, and its T.S. and R&D Teams are at your complete disposal to analyse your requirements and collaborate on project developments.

## PROPERTIES of LAPEX A (typical values)

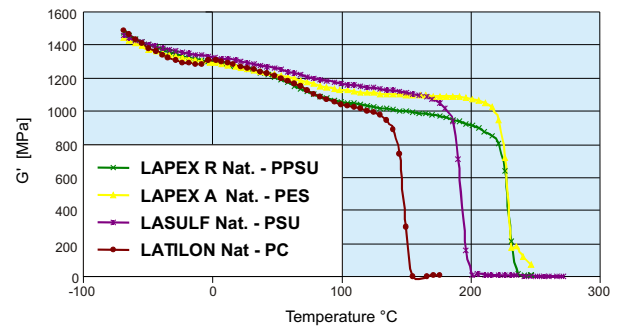
	Test Method	Unit	Unfilled	Glass fibre reinforced		
			LAPEX A	LAPEX A G/10	LAPEX A G/20	LAPEX A G/30
<b>Physical</b>						
Density	ISO 1183	g/cm <sup>3</sup>	1.36	1.42	1.50	1.58
Shrinkage along flow	LATI	%	0.60	0.45	0.35	0.30
Shrinkage across flow	LATI	%	0.60	0.55	0.50	0.45
<b>Mechanical</b>						
Tensile strength at yield	ISO 527	MPa	80	100	115	130
Elongation at break	ISO 527	%	> 40	3	2.5	2
Flexural strength at yield	ISO 178	MPa	120	150	170	185
Flexural modulus	ISO 178	MPa	2800	4400	6500	9000
Notched Izod	ASTM D256	J/m	85	45	70	80
<b>Electrical</b>						
Dielectric strength	ASTM D149	KV/mm	15	17	17	17
Comparative tracking index	IEC 112	V	150	125	125	125
<b>Thermal</b>						
H.D.T. 1.82 MPa	ISO 75	°C	200	208	210	210
Continuous use temperature	UL746B	°C	180	190	190	190
<b>Flammability</b>						
Rating @ 1.5 mm thickness	UL-94	-	V-0	V-0	V-0	V-0

**LATI Flexural Modulus vs. Temperature for PES**



PES retains high flexural modulus up to 180°C

**LATI Shear Modulus (G')**



**LATI Hydrolysis and Chemical Resistance**

Reagents	PES
Hydrocarbons	E
Aromatic solvents	S
Oxygenated solvents	S
Chlorinated hydrocarbons	F
Acids	E
Bases	E

Resistance: E= Excellent; G= Good; F= Fair; S= Severe attack

**LATI Sterilisation Resistance**

Resin	Cycles to Craze	Cycles to Rupture
PES	100	275

Autoclave Conditions: 0.18 MPa steam, 132°C, Steam contains 50 ppm Morpholine

Test Conditions: Bar: 127 x 13 x 3 mm, Flexural Stress - 6.9 MPa

**Industry Sectors:**

- Automotive
- Household appliances
- Industrial
- Medical
- Plumbing
- Others



Part of a boiler valve in LAPEX A G/20

**Note: should you be interested in receiving a more detailed brochure, just contact our Offices**

This document contains information based on average values as obtained from the results of laboratory tests and observations made on our materials. Tested materials were injection moulded, used in their natural colour, and conditioned in compliance with Standard ASTM D 618, procedure A (40 h - 23°C - 50%R.H.). These data refer to our best technical and scientific knowledge at the moment of testing and cannot be used as a basis for the development of applications.

For a better assessment of the materials, you are kindly requested to contact our technical or commercial offices, which are at your disposal and will supply detailed information on the most suitable characteristics for the intended use. With reference to DPR n. 224 dated May 24, 1988 issued in accordance with EC Guide-lines 85/374, LATI Industria Termoplastici S.p.A. declines all responsibility arising from an improper use of the products described in this document.