



LAPEX R

Based on (PPSU) Polyphenylsulphone

Key benefits:

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

LAPEX R is a family of high-temperature materials with a superior combination of properties. It provides very high heat deflection temperature under load together with exceptional hydrolytic stability and resistance to creep at high temperatures.

LAPEX R features outstanding impact properties compared to other high temperature materials. Moreover PPSU offers a good degree of chemical resistance and it is suitable for virtually-unlimited sterilisation cycles.

LAPEX R is intrinsically flame retardant and maintains UL94V-0 rating at low wall thickness. During combustion it gives low heat release, low smoke generation and toxic-gas emission so that it is suitable for use in public buildings or aircraft.

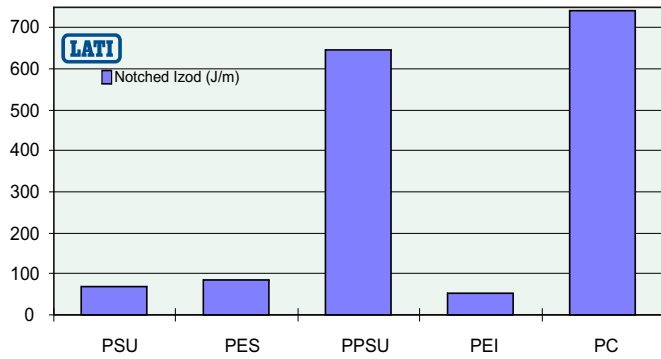
To prevent or to reduce internal stresses that may give micro cracking or failure in the long term, correct design and moulding are required. Moreover annealing at 165°C (1h for every mm of thickness) can be performed in order to reduce frozen-in stresses and stress cracking.

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.

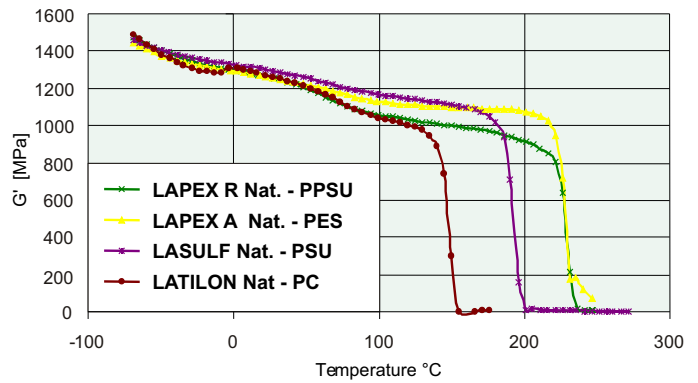
PROPERTIES of LAPEX R (typical values)

	Test Method	Unit	Unfilled	Glass fibre reinforced	
			LAPEX R	LAPEX R G/20	LAPEX R G/30
Physical					
Density	ISO 1183	g/cm ³	1.30	1.48	1.55
Shrinkage along flow	LATI	%	0.70	0.40	0.35
Shrinkage across flow	LATI	%	0.70	0.60	0.50
Mechanical					
Tensile strength at yield	ISO 527	MPa	75	110	125
Elongation at break	ISO 527	%	>50	2.5	2
Flexural strength at yield	ISO 178	MPa	90	160	180
Flexural modulus	ISO 178	MPa	2500	6200	8000
Notched Izod	ASTM D256	J/m	650	85	110
Electrical					
Dielectric strength	ASTM D149	KV/mm	15	17	17
Comparative tracking index	IEC 112	V	150	125	125
Thermal					
H.D.T. 1.82 MPa	ISO 75	°C	205	210	210
Continuous use temperature	UL746B	°C	190	200	200
Flammability					
Rating @ 1.5 mm thickness	UL-94	-	V-0	V-0	V-0

Notched IZOD values of various Thermoplastics (unfilled polymers)



LATI Shear Modulus (G')



LATI Hydrolysis and Chemical Resistance

Reagents	PPSU
Hydrocarbons	E
Aromatic solvents	F
Oxygenated solvents	F
Chlorinated hydrocarbons	G
Acids	E
Bases	E

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

Sterilisation Resistance

Resin	Cycles to Crazeing	Cycles to Rupture
PSU	80	150
PES	100	275
PPSU	>1000	No Rupture

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



Ultrasonic piezoelectric
(dental device)
in LAPEX R

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.