Sulphone Polymers

Key benefits:

- **Excellent dimensional stability**
- **Good impact resistance**
- **Suitable for contact with food and potable water**
- **Very good resistance to various sterilisation processes**
- **Outstanding hydrolysis resistance**
- **Good chemical resistance**
- **Inherently self-extinguishing;**
- **Low toxicity / optical density of smoke emission**
- **Transparent yellowish (base resin)**
- **Wide colour range**

LATI's family of amorphous sulphone polymers includes: **LASULF** Polysulphone (PSU), **LAPEX A** Polyethersulphone (PES) and **LAPEX R** Polyphenylsulphone (PPSU).

Sulphone Polymers are a family of high performance engineering thermoplastic resins characterised by the sulphone group.

The aromatic groups, ethers and sulphones which are typical for these polymers allow an excellent resistance to hydrolysis and thermal oxidation.

The size and spatial distribution of these groups prevent the polymer from organising into a semi-crystalline structure. For this reason polysulphones are amorphous polymers, naturally transparent yellowish (less evident on PSU).

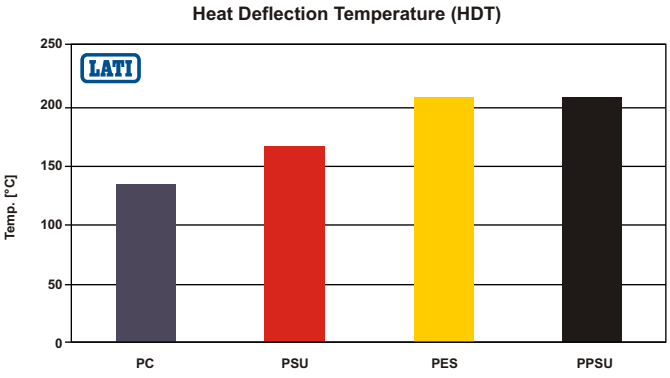
The difference in the chemical structure gives these three polymers slightly different mechanical and thermal properties, as well as chemical resistance.

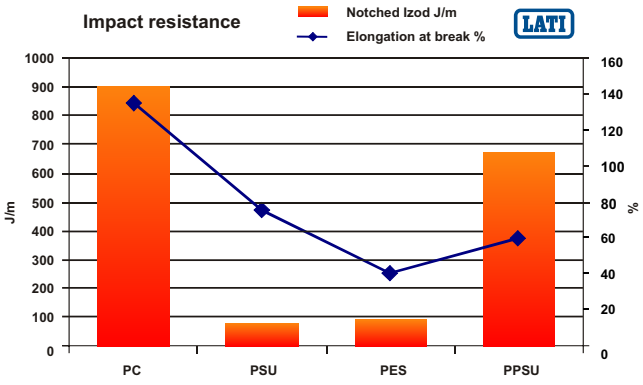
LATI is willing to share with you its expertise in this field, and its T.S. and R&D Teams are at your complete disposal to analyse your requirements and collaborate on project developments.

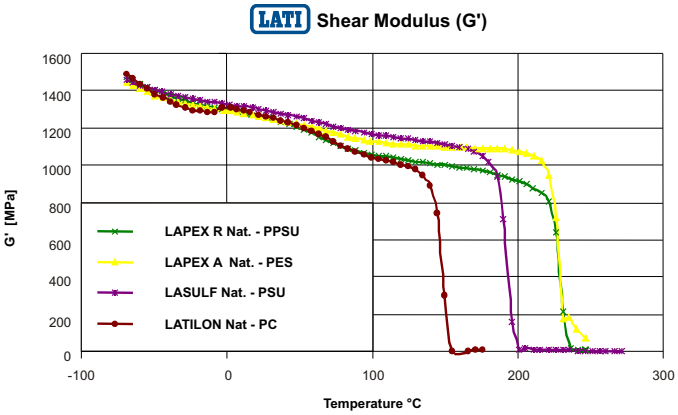
PROPERTIES (typical values)

	Test Method	Units	**PSU** LASULF	**PES** LAPEX A	**PPSU** LAPEX R	**PSU** LASULF G/30	**PES** LAPEX A G/30	**PPSU** LAPEX R G/30
General								
Density	ISO 1183	g/cm^3	1.24	1.36	1.30	1.45	1.58	1.55
Shrinkage - along flow	LATI	%	0.70	0.60	0.70	0.30	0.30	0.35
Shrinkage - across flow	LATI	%	0.70	0.60	0.70	0.30	0.45	0.50
Mechanical								
Tensile strength at yield	ISO 527	MPa	70	80	75	130	130	125
Elongation at break	ISO 527	%	75	>40	>50	2	2	2
Flexural strength at yield	ISO 178	MPa	103	120	90	165	185	180
Flexural modulus	ISO 178	MPa	2600	2800	2500	8300	9000	8000
Notched Izod	ASTM D256	J/m	75	85	650	100	80	110
Electrical								
Dielectric strength	ASTM D149	KV/mm	17	15	15	18	17	17
Comparative tracking index	IEC 112	V	150	150	150	125	125	125
Thermal								
HDT at 1.82 MPa	ISO 75	°C	170	200	205	180	210	210
Continuous use temperature	UL746B	°C	150	180	190	160	190	200
Flammability								
Rating @ 1.5 mm thickness	UL-94	-	V-1	V-0	V-0	V-0	V-0	V-0

LATI Industria Termoplastici S.p.A. - Via F. Baracca,7 - 21040 Vedano Olona (VA) Italy
Tel. +39 - 0332 409111 - Fax +39 - 0332 409307 - http://www.lati.com - e-mail: marketing@it.lati.com







Hydrolysis and Chemical Resistance

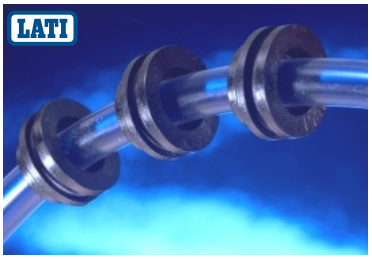
Reagents	*PSU*	*PES*	*PPSU*
Hydrocarbons	G	E	E
Aromatic solvents	S	S	F
Oxygenated solvents	S	S	F
Chlorinated hydrocarbons	S	F	G
Acids	E	E	E
Bases	E	E	E

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

Sterilisation Resistance

Resin	Cycles to Crazing	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



Part of a boiler valve in LAPEX A G/20

Arm or leg electrode (for electrocardiogram) in LASULF

Ultrasonic piezoelectric (dental device) in LAPEX R and LASULF

Humidifying chamber in LASULF

Industry Sectors:

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

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.