

LASULF

Product made of Polysulphone (PSU). Unfilled. 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.

Versions of product mentioned herein may support applications in the pharmaceutical, medical or dental sector. Nevertheless, manufactured parts have to be verified according to the specific directives.

PHYSICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
Density	ISO 1183	1.24 g/cm ³
Linear shrinkage at moulding		
Longitudinal (0.078in/8,700psi)	ISO 294-4	0.60 ÷ 0.80 %
Transversal (0.078in/8,700psi)	ISO 294-4	0.65 ÷ 0.85 %
Dimensional stability	---	85
Moisture absorption		
saturation, in air	ISO 62-4	0.30 %
at saturation, in water	ISO 62-4	0.80 %
Melt Flow Index (MFI) - 650°F/4.76lbs	ASTM D 1238	7.00 g/10'
MECHANICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
CHARPY impact strength		
Unnotched, at 23°F	ISO 179-1eU	NB ft.lb/in ²
Unnotched, at -20°F	ISO 179-1eU	NB ft.lb/in ²
Notched, at +23°F	ISO 179-1eA	2.3 ft.lb/in ²
Notched, at +-20°F	ISO 179-1eA	0.7 ft.lb/in ²
MECHANICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
Tensile elongation		
At yield (0.196 in/min), 23°F	ISO 527	0.8 %
At yield (0.196 in/min), 60°F	ISO 527	0.7 %
At yield (0.196 in/min), 90°F	ISO 527	0.6 %
At yield (0.196 in/min), 120°F	ISO 527	0.6 %
At yield (0.196 in/min), 150°F	ISO 527	0.3 %
At break (0.196 in/min), 23°F	ISO 527	>50 %
At break (0.196 in/min), 60°F	ISO 527	>50 %
At break (0.196 in/min), 90°F	ISO 527	>50 %
At break (0.196 in/min), 120°F	ISO 527	>50 %
At break (0.196 in/min), 150°F	ISO 527	>50 %

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MECHANICAL PROPERTIES

Tensile strength

At yield (0.196 in/min), 23°F	ISO 527	2900	psi
At yield (0.196 in/min), 60°F	ISO 527	2610	psi
At yield (0.196 in/min), 90°F	ISO 527	2320	psi
At yield (0.196 in/min), 120°F	ISO 527	2030	psi
At yield (0.196 in/min), 150°F	ISO 527	1015	psi
At break (0.196 in/min), 23°F	ISO 527	10500	psi
At break (0.196 in/min), 60°F	ISO 527	10500	psi
At break (0.196 in/min), 90°F	ISO 527	9000	psi
At break (0.196 in/min), 120°F	ISO 527	7500	psi
At break (0.196 in/min), 150°F	ISO 527	5250	psi

MECHANICAL PROPERTIES

Elastic modulus

Tensile (0.04 in/min), 23°F	ISO 527	375	kpsi
Tensile (0.04 in/min), 60°F	ISO 527	330	kpsi
Tensile (0.04 in/min), 90°F	ISO 527	315	kpsi
Tensile (0.04 in/min), 120°F	ISO 527	285	kpsi
Tensile (0.04 in/min), 150°F	ISO 527	270	kpsi

THERMAL PROPERTIES

Coefficient of linear thermal expansion (CLTE)

30°F to 100°F (longitudinal)	ISO 11359	55	× 10 ⁻⁶ K ⁻¹
30°F to 100°F (transversal)	ISO 11359	55	× 10 ⁻⁶ K ⁻¹

VICAT - Softening point

11 lb (heating rate 250°F/h)	ISO 306	347	°F
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HDT - Heat Deflection Temperature

66 psi	ISO 75	356	°F
264 psi	ISO 75	329	°F

Thermal conductivity

in plane	ASTM E 1461-92	1.4	W/(m·K)
through plane	ASTM E 1461-92	1.4	W/(m·K)

FLAMMABILITY

Oxygen Index

	ASTM D 2863	26	%
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Flammability rating

0.125 in. thickness	UL 94	HB	
0.060 in. thickness	UL 94	HB	

GWFI - Glow Wire Flammability Index

0.078 in. thickness	IEC 60695-2-12	960	°C
0.040 in. thickness	IEC 60695-2-12	960	°C

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ELECTRICAL PROPERTIES	STANDARD	VALUE	MEASURE	UNITS
CTI - Comparative Tracking Index				
solution A (without surfactant)	IEC 60112	125	V	
Electrical resistivity				
surface, dry	ASTM D 257 / ASTM D4496	1E12	ohm	
Dielectric strength (short period)				
0.078 in. thickness, 73°F, dry	ASTM D 149	432	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 4 hours at $250 \div 265^{\circ}\text{F}$. Increase time in case of damp 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): $610-615-635-625^{\circ}\text{F}$.

RESIDENCE TIME

Maximum allowable residence time: 15 minutes. Do not exceed this limit. Maximum number of complete shots (in the barrel) suggested: $1 \div 3$

MELT TEMPERATURE

Suggested range of melt temperature: $570 \div 625^{\circ}\text{F}$. 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: $250 \div 320^{\circ}\text{F}$. 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: low to medium. Best results are achieved by using an injection profile.

TANGENTIAL SCREW VELOCITY (V)

Maximum suggested tangential velocity (V): $0.65 \div 1.00$ 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: $100 \div 150$ 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): $50 \div 75\%$ of injection pressure.

CUSHION

Minimum suggested cushion: $0.10 \div 0.25$ in.

BACK PRESSURE

Suggested backpressure: $45 \div 70$ 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

Valve gates or small injection gates can be used.

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.