LATI HIGH PERFORMANCE THERMOPLASTICS

LARTON K/20

Compound based on Polyphenylene Sulphide (PPS).
Carbon fibre.
Very good chemical resistance. Very good thermal resistance. Low smoke toxicity index and optical density.

PHYSICAL PROPERTIES - Typical values	STANDARD	VALUE	MEASURE UNITS
Density	ISO 1183	1.41	g/cm³
Linear shrinkage at moulding - 2.0 mm thickness (at 60 MPa of cavity pressure)			
Longitudinal	ISO 294-4	0.10 ÷ 0.20	%
Transversal	ISO 294-4	0.20 ÷ 0.30	%
MECHANICAL PROPERTIES - Typical values			
IZOD impact strength (sample 63.5x12.7x3.2 mm)			
Notched, at +23°C	ASTM D 256-A	40	J/m
CHARPY impact strength (sample 80x10x4 mm)			
Unnotched, at +23°C	ISO 179-1eU	18	kJ/m²
Notched, at +23°C	ISO 179-1eA	3.5	kJ/m²
Tensile elongation (speed 5 mm/min)			
At break, 23°C	ISO 527 (1)	1	%
At break, 60°C	ISO 527 (1)	1.1	%
At break, 90°C	ISO 527 (1)	1.6	%
At break, 120°C	ISO 527 (1)	2	%
At break, 150°C	ISO 527 (1)	2.3	%
Tensile strength (speed 5 mm/min)			
At break, 23°C	ISO 527 (1)	150	MPa
At break, 60°C	ISO 527 (1)	135	MPa
At break, 90°C	ISO 527 (1)	105	MPa
At break, 120°C	ISO 527 (1)	70	MPa
At break, 150°C	ISO 527 (1)	50	MPa
Elastic modulus			
Tensile (speed 1 mm/min), at 23°C	ISO 527 (1)	17000	MPa
Tensile (speed 1 mm/min), at 60°C	ISO 527 (1)	16000	MPa
Tensile (speed 1 mm/min), at 90°C	ISO 527 (1)	15000	MPa
Tensile (speed 1 mm/min), at 120°C	ISO 527 (1)	10500	MPa
Tensile (speed 1 mm/min), at 150°C	ISO 527 (1)	7200	MPa

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THERMAL PROPERTIES - Typical values	STANDARD	VALUE	MEASURE UNITS
Coefficient of linear thermal expansion (CLTE)			
+30°C to +100°C (longitudinal)	ASTM D 696	4	µm/(m·°C)
VICAT - Softening point			
49 N (heating rate 50°C/h)	ISO 306	255	°C
HDT - Heat Deflection Temperature			
0.45 MN/m²	ISO 75	280	°C
1.81 MN/m²	ISO 75	265	°C
C.U.T. - Continuous Use Temperature (20,000h)	---	220	°C
ELECTRICAL PROPERTIES - Typical values			
Electrical resistivity			
Surface	ASTM D 257	1E3	ohm
Volume	ASTM D 257	1E4	ohm.cm

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PREDRYING CONDITIONS — At least 3 hours at 110 ÷ 130°C

These are the suggested conditions to reduce the moisture content to adequate levels. Temperature and drying time are reduced when using vacuum ovens. A particularly wet material may need longer drying time.

ACTUAL MELT TEMPERATURE — 290 ÷ 310°C

The injection machine settings needed to obtain the suggested melt temperature will depend greatly on shot size and machine capacity, as well as other molding parameters such as: injection speed, screw RPM, back pressure, etc. 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 — 130 ÷ 140°C

The mold temperature suggested above is the actual steel temperature. 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.

INJECTION SPEED — Medium to high

The advisable injection speed greatly depends on cavity geometry and injection machine size. The use of high injection speed can improve the surface appearance, but it can also cause outgassing and burn marks due to overheating through shear stress.

REGRIND USAGE

The use of regrind is possible, but should be assessed on the basis of the project, moulding parameters, and type of grinding. The effect of using regrind on material properties must be evaluated by the customer on its specific project and process. High percentages of regrind can cause a reduction in viscosity and fibre length, reducing mechanical properties, reducing mechanical properties

HOT RUNNER MOULDS

Hot runner moulds can be used when a very tight temperature control is assured.

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TO AVOID

Shut-off nozzles and internally heated hot runners have to be avoided. In order to prevent any material degradation, over-dimensioned machines should be avoided.

CONTACTS

LATI Industria Termoplastici S.p.A.