

LARPEEK 10 G/15

Polyetheretherketone (PEEK) based compound.

Glass fibres. Very good chemical resistance. Very good thermal properties. Low smoke density and low toxicity index.

PHYSICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
Density	ISO 1183	1.40 g/cm ³
Linear shrinkage at moulding		
Longitudinal (2.0mm/60MPa)	ISO 294-4	0.40 ÷ 0.65 %
Transversal (2.0mm/60MPa)	ISO 294-4	0.70 ÷ 1.00 %
Moisture absorption (in air)		
after 24hrs	ISO 62-4	0.07 %
MECHANICAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
CHARPY impact strength		
Unnotched, at +23°C	ISO 179-1eU	45.0 kJ/m ²
Unnotched, at -20°C	ISO 179-1eU	40.0 kJ/m ²
Notched, at +23°C	ISO 179-1eA	4.0 kJ/m ²
Notched, at -20°C	ISO 179-1eA	3.0 kJ/m ²
Tensile elongation		
At yield (5 mm/min), 23°C	ISO 527 (1)	-
At yield (5 mm/min), 60°C	ISO 527 (1)	-
At yield (5 mm/min), 90°C	ISO 527 (1)	3.0 %
At yield (5 mm/min), 120°C	ISO 527 (1)	3.0 %
At yield (5 mm/min), 150°C	ISO 527 (1)	3.5 %
At break (5 mm/min), 23°C	ISO 527 (1)	2.8 %
At break (5 mm/min), 60°C	ISO 527 (1)	3.1 %
At break (5 mm/min), 90°C	ISO 527 (1)	3.4 %
At break (5 mm/min), 120°C	ISO 527 (1)	3.8 %
At break (5 mm/min), 150°C	ISO 527 (1)	4.5 %
Tensile strength		
At yield (5 mm/min), 23°C	ISO 527 (1)	-
At yield (5 mm/min), 60°C	ISO 527 (1)	-
At yield (5 mm/min), 90°C	ISO 527 (1)	110 MPa
At yield (5 mm/min), 120°C	ISO 527 (1)	95 MPa
At yield (5 mm/min), 150°C	ISO 527 (1)	70 MPa
At break (5 mm/min), 23°C	ISO 527 (1)	135 MPa
At break (5 mm/min), 60°C	ISO 527 (1)	125 MPa
At break (5 mm/min), 90°C	ISO 527 (1)	110 MPa
At break (5 mm/min), 120°C	ISO 527 (1)	90 MPa
At break (5 mm/min), 150°C	ISO 527 (1)	70 MPa
Elastic modulus		
Tensile (speed 1 mm/min), at 23°C	ISO 527 (1)	6300 MPa
Tensile (speed 1 mm/min), at 60°C	ISO 527 (1)	6100 MPa
Tensile (speed 1 mm/min), at 90°C	ISO 527 (1)	5700 MPa
Tensile (speed 1 mm/min), at 120°C	ISO 527 (1)	5500 MPa
Tensile (speed 1 mm/min), at 150°C	ISO 527 (1)	5100 MPa

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THERMAL PROPERTIES	STANDARD	VALUE MEASURE UNITS
Coefficient of linear thermal expansion (CLTE)		
+30°C to +100°C (longitudinal)	ISO 11359-2	18 $\mu\text{m}/(\text{m}\cdot^{\circ}\text{C})$
VICAT - Softening point		
49 N (heating rate 50°C/h)	ISO 306	>300 °C
HDT - Heat Deflection Temperature		
0.45 MN/m ²	ISO 75	290 °C
1.81 MN/m ²	ISO 75	285 °C
C.U.T. - Continuous Use Temperature		
Long period (20,000h)	---	220 °C
FLAMMABILITY	STANDARD	VALUE MEASURE UNITS
Flammability rating		
3.00 mm thickness	UL 94	V-0
1.50 mm thickness	UL 94	V-0
0.75 mm thickness	UL 94	V-1

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MATERIAL - STORAGE

Sealed, undamaged packages has to be kept in dry storage facilities, providing they are also able to protect them 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

At least 3 hours at $120 \div 150^{\circ}\text{C}$

These are the suggested conditions to reduce the moisture content to adequate levels. Temperature and drying time can be reduced by using vacuum ovens. Particularly wet material may need a longer drying time.

ACTUAL MELT TEMPERATURE

$370 \div 400^{\circ}\text{C}$

The injection moulding machine settings needed to obtain the suggested melt temperature will depend greatly on shot size and machine capacity, as well as other moulding 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

$170 \div 200^{\circ}\text{C}$

The mould temperature suggested above is the actual tool 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 moulding 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 used. The effect of using regrind on material properties must be evaluated by the customer on its specific project and process. High percentages of regrind may cause a reduction in viscosity and fibre length, reducing mechanical properties, first resilience.

HOT RUNNER MOULDS

Hot runner moulds may 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.

EQUIPMENT WEAR

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 fibre filled ones). Appropriate equipment surface treatments are suggested in these cases, as well as a proper venting to avoid material overheating.

NOTES

The products mentioned herein are not suitable for applications in contact with foodstuff or for potable water transportation, or for toy manufacturing. The products mentioned herein are not suitable for applications in the pharmaceutical, medical or dental sector.

CONTACTS

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Values shown are based on testing of injection moulded laboratory test specimens, conditioned according to the practice and represent data that fall within the standard range of properties for non-coloured material, if not otherwise specified. As they may be subject to variations, these values do not represent a sufficient basis for any part design and are not intended for use in establishing values for specification purposes. Properties of moulded parts can be influenced by a wide range of factors including, but not limited to, colorants, part design, processing conditions, post-treatment conditions, environmental conditions and usage of regrind during the moulding process. If data are explicitly indicated as provisional, range of properties has to be considered wider. This information and technical assistance are provided as a convenience for informational purposes only and are subject to change without notice. The customer shall always ensure that the latest release of technical information is at his own disposal. Lati S.p.A. extends no warranties or guarantees, including a warranty of merchantability of whatever use is made of the product, and make no representations as to the accuracy, suitability, reliability, completeness and sufficiency of the information provided, and assume no responsibility regarding the consequences of its use or for any printing errors. It is the customer's responsibility to inspect and test our products in order to determine to his own satisfaction whether they are suitable for his intended uses and applications or used in conjunction with third-party materials. This application-specific analysis shall at least include preliminary testing to determine the suitability for the customer's particular purpose from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us as the manner in which the customer use and the purpose to which our products are beyond our control. Lati S.p.A. does not accept and hereby disclaims liability for any damages whatsoever in connection with the use of or reliance on this information. No one is authorised to make any warranties, issue any immunities or assume any liabilities on behalf of Lati S.p.A. except in a writing signed by a specifically authorised Lati S.p.A. executive. Unless otherwise agreed in writing, the exclusive remedy for all claims is replacement of the product or refund of the purchase price at Lati's option, and in no event shall Lati S.p.A. be liable for special, consequential, incidental, punitive or exemplary damages. No information herein can be considered as a suggestion to use any product in conflict with intellectual property rights. Lati S.p.A. disclaim any liability that may be claimed for infringement or alleged infringement of patents. Unless specifically stated in writing, the products mentioned herein are not suitable for applications in the pharmaceutical, medical or dental sector, in contact with foodstuff or for potable water transportation. For any other issues Lati S.p.A. Conditions of Sales apply.