

KETRON® PEEK-GF30

This 30% glass fibre reinforced grade offers higher stiffness and creep resistance than KETRON PEEK-1000 and has a much better dimensional stability. KETRON PEEK-GF30 is very appropriate for structural parts carrying high static loads for long periods of time at elevated temperatures. Its suitability for sliding parts, however, is to be carefully examined since the glass fibres tend to abrade the mating surface.

Physical properties (indicative values*)

PROPERTIES	Test methods ISO/(IEC)	Units	VALUES
Colour	—	—	natural (brownish grey)
Density	1183	g/cm ³	1.51
Water absorption:			
- at saturation in air of 23°C / 50% RH	—	%	0.14
- at saturation in water of 23°C	—	%	0.30
Thermal Properties			
Melting temperature	—	°C	340
Thermal conductivity at 23°C	—	W/(K·m)	0.43
Coefficient of linear thermal expansion:			
- average value between 23 and 100°C	—	m/(m·K)	30·10 ⁻⁶
- average value between 23 and 150°C	—	m/(m·K)	30·10 ⁻⁶
- average value above 150°C	—	m/(m·K)	65·10 ⁻⁶
Temperature of deflection under load:			
- method A: 1.8 MPa	75	°C	230
Max. allowable service temperature in air:			
- for short periods (1)	—	°C	310
- continuously: for min. 20,000h (2)	—	°C	250
Flammability (3):			
- "Oxygen index"	4589	%	40
- according to UL 94 (1.5/3 mm thickness)	—	—	V-0/V-0
Mechanical Properties at 23°C			
Tension test (4):			
- tensile stress at break (5)	527	MPa	90
- tensile strain at break (5)	527	%	5
- tensile modulus of elasticity (6)	527	MPa	6,300
Compression test (7):			
- compressive stress at 1% nominal strain (6)	604	MPa	41
- compressive stress at 2% nominal strain (6)	604	MPa	81
Charpy impact strength - Unnotched (8)	179/1eU	kJ/m ²	35
Charpy impact strength - Notched	179/1eA	kJ/m ²	4
Ball indentation hardness (9)	2039-1	N/mm ²	270
Rockwell hardness (9)	2039-2		M 99
Electrical Properties at 23°C			
Electric strength (10)	(60243)	kV/mm	24
Volume resistivity	(60093)	Ω·cm	> 10 ¹⁴
Surface resistivity	(60093)	Ω	> 10 ¹³
Relative permittivity ε _r :			
- at 100 Hz	(60250)	—	3.2
- at 1 MHz	(60250)	—	3.6
Dielectric dissipation factor tan δ :			
- at 100 Hz	(60250)	—	0.001
- at 1 MHz	(60250)	—	0.002
Comparative tracking index (CTI)	(60112)	—	175

Legend

- (1) Only for short time exposure (a few hours) in applications where no or only a very low load is applied to the material.
- (2) Temperature resistance over a period of min. 20,000 hours. After this period of time, there is a decrease in tensile strength of about 50% as compared with the original value. The temperature value given here is thus based on the thermal-oxidative degradation which takes place and causes a reduction in properties. Note however, that the maximum allowable service temperature depends in many cases essentially on the duration and the magnitude of the mechanical stresses to which the material is subjected.
- (3) These mostly estimated ratings, derived from raw material supplier data, are not intended to reflect hazards presented by the materials under actual fire conditions. There is no UL-yellow card available for KETRON PEEK-GF30 stock shapes.
- (4) Test specimens: Type 1 B.
- (5) Test speed: 5 mm/min.
- (6) Test speed: 1 mm/min.
- (7) Test specimens: cylinders Ø 12 x 30 mm.
- (8) Pendulum used: 4 J.
- (9) 10 mm thick test specimens.
- (10) 1 mm thick test specimens.

This table is a valuable help in the choice of a material. The data listed here fall within the normal range of product properties of dry material. **However, they are not guaranteed and they should not be used to establish material specification limits nor used alone as the basis of design.**

It has to be noted that KETRON PEEK-GF30 is a fibre reinforced, and consequently anisotropic material (properties differ when measured parallel and perpendicular to the extrusion direction).

Note: 1 g/cm³ = 1,000 kg/m³; 1 MPa = 1 N/mm²; 1 kV/mm = 1 MV/mm

Availability

Round Rods: Ø 6-100 mm - **Plates:** Thicknesses 5-60 mm - **Tubes:** O.D. 50-200 mm

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