

Peek GF

Description

PEEK-GF Polyetheretherketone (PEEK) reinforced with glass fiber (GF); Common grades: GF15, GF20, GF30 (numbers indicate glass fiber content by weight percentage). It is a high-performance specialty engineering plastic that retains PEEK's high-temperature resistance, corrosion resistance, and high strength. The addition of glass fiber significantly enhances rigidity, dimensional stability, and creep resistance. It is commonly used as a metal replacement in precision structural components and high-temperature applications.

Features

1. Mechanical properties: Strength and rigidity are significantly higher than those of pure PEEK; excellent creep resistance and fatigue resistance ensure no deformation under long-term load; outstanding dimensional stability with minimal deformation across high and low temperatures; slightly lower toughness and increased brittleness compared to pure PEEK.
2. Thermal performance: Melting point: Approximately 343°C; Heat deflection temperature: $\approx 305 \sim 315^\circ\text{C}$; Continuous service temperature: $\approx 250^\circ\text{C}$; Flame retardancy: UL94 V-0 (halogen-free, low smoke).
3. Chemical & environmental resistance: Resistant to oils, acids, alkalis, hot water, and steam; excellent resistance to radiation, aging, and weathering; extremely low water absorption, ensuring dimensional stability in humid conditions.



Datasheet >

4. Electrical properties: Stable insulation performance at high temperatures and high frequencies; excellent electrical insulating material.

5. Processing & density: Suitable for injection molding, machining, grinding, turning, and milling; significantly lighter than metals, making it an ideal choice for lightweight applications.

Parameters

(PEEK-GF30 Standard Values)

1. Basic Physical Properties

Density: 1.51~1.53g/cm³

Water absorption (24h): <0.08%

Coefficient of linear expansion (20~100°C): 1.8~2.2x10⁻⁵/°C

2. Mechanical Properties

Tensile strength: 170~190 MPa

Elongation at break: 2~4%

Flexural strength: 240~270 MPa

Flexural modulus: 9~ 11 GPa

Heat deflection temperature (1.82MPa): 305~315°C

Rockwell hardness: ≈R120~125

