

What is PEEK GLD140 FG natural

PEEK GLD140 FG natural

PEEK, lubricant-modified, food grade

PEEK GLD140 FG natural is a lubricant-modified polyetheretherketone in a food grade compound. An internally embedded solid lubricant significantly reduces the coefficient of friction and wear – for dry-running sliding and guide elements at temperatures up to 250 °C.

Properties

PEEK GLD140 FG natural is a semi-crystalline high-performance thermoplastic with a homogeneously distributed solid lubricant. The sliding modification reduces friction and stick-slip effects and considerably improves wear behaviour compared to unfilled PEEK, without compromising resistance to temperature, chemicals and hydrolysis. The material is flame retardant (UL 94 V0) and dimensionally stable.

The modification slightly reduces stiffness, strength and elongation at break compared to standard PEEK; the compound is designed for food contact (see FDA declaration).

Advantages

- Internal sliding modification, low coefficient of friction, low wear
- Compound designed for food contact
- Continuous service up to 250 °C, resistant to steam and cleaning agents
- Good dimensional stability, low moisture absorption

Disadvantages

- Lower strength and elongation at break than unfilled PEEK
- High material cost compared to engineering plastics
- Not resistant to concentrated sulphuric acid and some halogenated hydrocarbons

Processing

PEEK GLD140 FG natural can be machined using all conventional cutting methods; because of the high hardness, carbide tools with sharp cutting edges are recommended. Good cooling via chip removal remains important to avoid heat build-up and residual stresses in the part.

For tight tolerances and thick-walled parts, we recommend intermediate annealing to relieve machining stresses; thanks to the low moisture absorption, no conditioning is required.

For components with food contact, we use food-compatible cooling lubricants and supply with batch traceability on request.

Typical Applications

PEEK GLD140 FG natural is used wherever dry-running sliding elements with food contact are exposed to high temperatures – for example in filling, packaging and baking lines and in mechanical engineering for the food industry.

- Plain bearings, bushings and slide strips
- Guide and format parts in filling and packaging lines
- Wear parts in baking and meat processing lines

Typical Properties

- Internal lubricant modification for reduced friction
- Compound suitable for food contact
- Continuous service up to 250 °C

Product Examples

- Plain bearings and bushings
- Guide and format parts
- Wear parts

Typical Industries

- Food Industry
- Packaging Industry
- Mechanical Engineering

	Test Method	Unit	Value
General Properties			
Density	DIN EN ISO 1183-1	g / cm ³	1.36
Water absorption	DIN EN ISO 62	%	0.200
Flammability (Thickness 3 mm / 6 mm)	UL 94		V0 / V0
Mechanical Properties			
Yield stress	DIN EN ISO 527	MPa	87
Elongation at break	DIN EN ISO 527	%	3
Tensile modulus of elasticity	DIN EN ISO 527	MPa	3.700
Notched impact strength	DIN EN ISO 179	kJ / m ²	3.5
Ball indentation hardness	DIN EN ISO 2039-1	MPa	220
Shore hardness	DIN EN ISO 868	scale D	86
Thermal Properties			
Melting temperature	ISO 11357-3	°C	343
Coefficient of linear thermal expansion	DIN 53752	10 ⁻⁶ / K	55
Service temperature, long term	Average	°C	-30 ... 250
Service temperature, short term (max.)	Average	°C	310
Heat deflection temperature	DIN EN ISO 75, Verf. A, HDT	°C	150