Product Information

VESTAKEEP® 4000 GF30 BK

GLASS FIBER-REINFORCED (30%) POLYETHER ETHER KETONE

VESTAKEEP® 4000 GF30 BK is a glass fiber-reinforced (30%) polyether ether ketone for injection molding.

The semi-crystalline polymer features superior mechanical, thermal, and chemical resistance. Parts made from VESTAKEEP® 4000 GF30 BK are of low flammability.

VESTAKEEP® 4000 GF30 BK can be processed on common injection molding machines for thermoplastics.

We recommend a melt temperature of 380°C to 400°C during the injection molding process. The mold temperature should be within a range of 160°C to 200°C, preferably 180°C.

VESTAKEEP® 4000 GF30 BK is supplied as cylindrical pellets in 25 kg boxes with moisture-proof polyethylene liners.

Inside the original and undamaged packaging, the product has a shelf life of at least 2 years when stored in dry rooms at temperatures not exceeding 30°C.

Pigmentation may affect the values.

For guidance processing of VESTAKEEP® 4000 GF30 please follow the general recommendations in our brochure “VESTAKEEP® PEEK Processing Guidelines“.

The values presented are typical or average values, they do not constitute a specification.

Key Features

Industrial Sector
Automotive and Mobility, Industry and Engineering

Processing
Injection molding, Extrusion

Delivery form
Pellets, Granules

Resistance to
Heat (thermal stability), Fire / burn

Additives
Glass fibers

Mechanical properties ISO	dry	Unit	Test Standard
Tensile modulus	**11000**	MPa	ISO 527

Tensile strength	**160**	MPa	ISO 527
Stress at break	**160**	MPa	ISO 527
Strain at break, B	**2**	%	ISO 527
Poisson's ratio, 23°C	**0.41**	-	ISO 527
Charpy impact strength, +23°C	**70**	kJ/m²	ISO 179/1eU
Type of failure	**C**	-	-
Charpy impact strength, -30°C	**75**	kJ/m²	ISO 179/1eU
Type of failure	**C**	-	-
Charpy notched impact strength, +23°C	**10**	kJ/m²	ISO 179/1eA
Type of failure	**C**	-	-
Charpy notched impact strength, -30°C	**9**	kJ/m²	ISO 179/1eA
Type of failure	**C**	-	-

Thermal properties	**dry**	**Unit**	**Test Standard**
Melting temperature	**340**	°C	ISO 11357-1/-3
Temp. of deflection under load A, 1.80 MPa	**312**	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**335**	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**340**	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**335**	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**30**	E-6/K	ISO 11359-1/-2
Melting Temperature	**340**	°C	ASTM D 3418

Physical properties	**dry**	**Unit**	**Test Standard**
Density	**1500**	kg/m³	ISO 1183
Moisture content	**0.04**	Gew.-%	ISO 15512
Density	**1500**	kg/m³	ASTM D 792

Burning Behav.	dry	Unit	Test Standard
Burning behav. at 1.5 mm nom. thickn.	**V-0**	class	IEC 60695-11-10
Thickness tested	**1.6**	mm	-
Burnin behav. at thickness h	**V-0**	class	IEC 60695-11-10
Thickness tested	**3.2**	mm	-
Glow Wire Flammability Index (GWFI)	**960**	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (GWIT)	**825**	°C	IEC 60695-2-13

Electrical properties	dry	Unit	Test Standard
Volume resistivity, V	**1E13**	Ohm*m	IEC 62631-3-1
Surface resistance, RSD	**1E14**	Ohm	IEC 62631-3-2
Relative permittivity, 1MHz	**3.3**	-	IEC 62631-2-1
CTI, test solution A, 50 drops value	**200**	-	IEC 60112
Assessment of the insulation group	**III a**	-	DIN EN 60664-1

Rheological properties	dry	Unit	Test Standard
Melt volume-flow rate, MVR	**32**	cm^3/10min	ISO 1133
Temperature	**400**	°C	-
Load	**21.6**	kg	-
Molding shrinkage, parallel	**0.3**	%	ISO 294-4, 2577
Molding shrinkage, normal	**0.6**	%	ISO 294-4, 2577
Mold temperature	**180**	°C	-

Polymer analytics	dry	Unit	Test Standard
Ash content	**29.8**	%	ISO 3451

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	**400**	°C	ISO 294
Injection Molding, mold temperature	**180**	°C	ISO 294

Injection Molding, injection velocity	**200**	mm/s	ISO 294

Characteristics

Applications
Encapsulation

Special Characteristics
Semi-crystalline, Low warpage / Low shrinkage

Color
Black

Chemical Resistance
General chemical resistance