

VESTAKEEP® 4000 CF30
PEEK-CF30

Evonik Operations GmbH

Carbon fiber-reinforced (30%), high viscosity polyether ether ketone

VESTAKEEP® 4000 CF30 is a carbon 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 CF30 are of low flammability.

VESTAKEEP® 4000 CF30 can be processed by common injection molding machines for thermoplastics.

We recommend a melt temperature between 380°C and 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 CF30 is supplied as granules 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 values.

For information about processing VESTAKEEP® 4000 CF30, 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.

FOR FURTHER INFORMATION PLEASE CONTACT US AT EVONIK-HP@EVONIK.COM OR VISIT OUR PRODUCT AT WWW.INDUSTRIAL.VESTAKEEP.COM

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	20	cm³/10min	ISO 1133
Temperature	380	°C	-
Load	21.6	kg	-
Molding shrinkage, parallel		%	ISO 294-4, 2577
Molding shrinkage, normal	0.4	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	23000	MPa	ISO 527
Stress at Break	240	MPa	ISO 527
Strain at Break	2	%	ISO 527
Impact Strength (Charpy), +23°C	60	kJ/m²	ISO 179/1eU
Type of failure	C	-	-
Impact Strength (Charpy), -30°C	60	kJ/m²	ISO 179/1eU
Type of failure	C	-	-
Notched Impact Strength (Charpy), +23°C	10	kJ/m²	ISO 179/1eA
Type of failure	C	-	-
Notched Impact Strength (Charpy), -30°C	9	kJ/m²	ISO 179/1eA
Type of failure	C	-	-

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	340	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	325	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	335	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	340	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	10	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	V-0	class	UL 94
Thickness tested	1.6	mm	-
Burning Behav. at thickness h	V-0	class	UL 94
Thickness tested	0.8	mm	-
Oxygen index	47	%	ISO 4589-1/-2

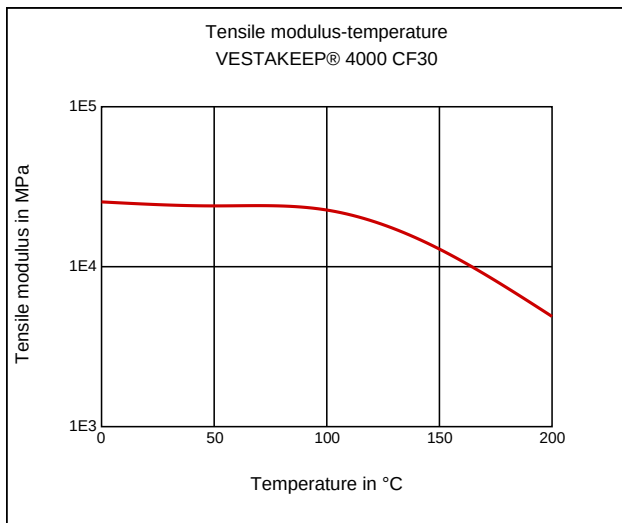
Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	17	-	IEC 62631-2-1
Dissipation Factor, 1MHz	230	E-4	IEC 62631-2-1
Volume Resistivity	10000	Ohm*m	IEC 62631-3-1
Surface Resistivity	1000000	Ohm	IEC 62631-3-2

Other Properties	Value	Unit	Test Standard
ISO Data			
Water Absorption	0.4	%	Sim. to ISO 62
Density	1400	kg/m³	ISO 1183

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	420	°C	ISO 294
Injection Molding, mold temperature	200	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294
Injection Molding, pressure at hold	120	MPa	ISO 294

Diagrams

Tensile Modulus-Temperature



Characteristics

Processing

Injection Molding, Other Extrusion

Delivery form

Pellets

Chemical Media Resistance

Acids

- ✓ Acetic Acid (5% by mass) (23°C)
- ✓ Citric Acid solution (10% by mass) (23°C)
- ✓ Hydrochloric Acid (36% by mass) (23°C)
- ✗ Nitric Acid (40% by mass) (23°C)
- ✓ Sulfuric Acid (5% by mass) (23°C)
- ✓ Chromic Acid solution (40% by mass) (23°C)

Bases

- ✓ Sodium Hydroxide solution (35% by mass) (23 °C)
- ✓ Sodium Hydroxide solution (1% by mass) (23 °C)
- ✓ Ammonium Hydroxide solution (10% by mass) (23 °C)

Alcohols

- ✓ Isopropyl alcohol (23 °C)
- ✓ Methanol (23 °C)
- ✓ Ethanol (23 °C)

Hydrocarbons

- ✓ n-Hexane (23 °C)
- ✓ Toluene (23 °C)
- ✓ iso-Octane (23 °C)

Ketones

- ✓ Acetone (23 °C)

Ethers

- ✓ Diethyl ether (23 °C)

Mineral oils

- ✓ SAE 10W40 multigrade motor oil (23 °C)
- ✓ Insulating Oil (23 °C)

Standard Fuels

- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23 °C)
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23 °C)
- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (23 °C)

Salt solutions

- ✓ Sodium Chloride solution (10% by mass) (23 °C)
- ✓ Sodium Hypochlorite solution (10% by mass) (23 °C)
- ✓ Sodium Carbonate solution (20% by mass) (23 °C)
- ✓ Sodium Carbonate solution (2% by mass) (23 °C)
- ✓ Zinc Chloride solution (50% by mass) (23 °C)

Other

- ✓ Ethyl Acetate (23 °C)
- ✓ Hydrogen peroxide (23 °C)
- ✓ Ethylene Glycol (50% by mass) in water (108 °C)
- ✓ Water (23 °C)
- ✓ Deionized water (90 °C)

Disclaimer

Liability Exclusion

These guide values are measured and provided by the product manufacturer and have been determined on standardised test specimens and can be affected by pigmentation, mould design and processing conditions. M-Base has taken the guide values from the producer's original Technical Data Sheet. **ALBIS AND M-BASE ARE THEREFORE NOT RESPONSIBLE FOR THE ACCURACY OF THE GUIDE VALUES AND CANNOT GIVE ANY WARRANTY WITH REGARD TO THEIR CORRECTNESS.**

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- risk class III applications according to EU directive 93/42/EEC
- any bodily implant application for greater than 30 days
- any critical component in any medical device that supports or sustains human life.

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