

Product Information

VESTAKEEP® 4000 FC30

Carbon fiber-reinforced, graphite and PTFE-filled polyether ether ketone

VESTAKEEP 4000 FC30 is a carbon fiber-reinforced, graphite and PTFE-filled polyether ether ketone for injection molding. Parts made of this resin can be used for bearing bushing or gearbox parts due to the self-lubricating effect.

The semi-crystalline polymer features superior mechanical, thermal, and chemical resistance. Parts made from VESTAKEEP 4000 FC30 are self-extinguishing.

VESTAKEEP 4000 FC30 can be processed by common injection molding machines for thermoplastics.

We recommend a melt temperature between 370°C and 380°C during the injection molding process. If temperatures exceed 380°C, toxic gases can be released. Adequate ventilation and protective equipment must be provided.

The mold temperature should be within a range of 160°C to 200°C, preferably 180°C.

VESTAKEEP 4000 FC30 is supplied as cylindrical pellets in 25 kg boxes with moisture-proof polyethylene liners.

For information about processing of VESTAKEEP 4000, please follow the general recommendations in our brochure "VESTAKEEP Polyether Ether Ketone."

For further information, please contact us at evonik-hp@evonik.com.

Property	Test method		Unit	VESTAKEEP 4000 FC30	
	international	national			
Density	23°C	ISO 1183	DIN EN ISO 1183	g/cm ³	1.45
Tensile test		ISO 527-1	DIN EN ISO 527-1		
Tensile strength		ISO 527-2	DIN EN ISO 527-2	MPa	140
Strain at break				%	2
Tensile modulus		ISO 527-1	DIN EN ISO 527-1	MPa	11500
		ISO 527-2	DIN EN ISO 527-2		
CHARPY impact strength		ISO 179/1eU	DIN EN ISO 179/1eU		
	23°C			kJ/m ²	45 C ¹⁾
	-30°C			kJ/m ²	45 C ¹⁾
CHARPY notched impact strength		ISO 179/1eA	DIN EN ISO 179/1eA		
	23°C			kJ/m ²	8 C ¹⁾
	-30°C			kJ/m ²	7 C ¹⁾
Temperature of deflection under load		ISO 75-1	DIN EN ISO 75-1		
		ISO 75-2	DIN EN ISO 75-2		
Method A	1.8 MPa			°C	310
Method B	0.45 MPa			°C	330
Vicat softening temperature		ISO 306	DIN EN ISO 306		
Method A	10 N			°C	340
Method B	50 N			°C	335
Linear thermal expansion		ISO 11359	DIN 53752		
	23-55°C				
longitudinal				10 ⁻⁴ K ⁻¹	0.2
Relative permittivity		IEC 60250	DIN VDE 0303-T4		
	50 Hz				6.1
	1 MHz				4.9
Volume resistivity		IEC 60093	DIN IEC 60093	Ohm · cm	10 ⁷
Surface resistance		IEC 60093	DIN IEC 60093	Ohm	10 ⁵
Melting range		ISO 11357			
DSC	2 nd heating			°C	approx. 340
Melt volume-flow rate (MVR)		ISO 1133	DIN EN ISO 1133		
	380°C/ 5kg			cm ³ /10 min	2.5
Flammability acc. UL94		IEC 60695	UL94		
	1.6 mm				V-0
Glow wire test		IEC 60695-2-	DIN EN 60695-2-		
GWIT	2 mm	12/13	12/13	°C	900
GWFI	2 mm			°C	960
Mold shrinkage		determined on 2 mm sheets			
	in flow direction	with film gate at rim		%	0.2
	in transverse direction	mold temperature 180°C, ISO 294-4		%	0.4

Pigmentation may affect values.

¹⁾ C = Complete break, incl. hinge break H

® = registered trademark

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