

VESTAKEEP® 2000 FC30
 (PEEK+PTFE)-(CF+CD)20

Evonik Operations GmbH

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

VESTAKEEP® 2000 FC30 is a medium-viscosity, carbon fiber-reinforced, graphite and PTFE filled polyether ether ketone for injection molding.

The semi-crystalline polymer features superior mechanical, thermal, and chemical resistance. Parts made from VESTAKEEP® 2000 FC30 are of low flammability.

Parts made of this resin can be used for bearing bushing or gearbox parts, due to the self-lubricating effect.

VESTAKEEP® 2000 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. The mold temperature should be within a range of 160°C to 200°C, preferably 180°C. If temperatures exceed 380°C, toxic gases can be released. Adequate ventilation and protective equipment must be provided.

VESTAKEEP® 2000 FC30 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 values.

For information about processing of VESTAKEEP® 2000 FC30, 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.

流变性能	数值	单位	试验方法
ISO数据			
熔体体积流动速度, MVR	20	cm³/10min	ISO 1133
温度	380	°C	-
载荷	5	kg	-
模塑收缩率, 平行	0.1	%	ISO 294-4, 2577
模塑收缩率, 垂直	0.4	%	ISO 294-4, 2577

机械性能	数值	单位	试验方法
ISO数据			
拉伸模量	12600	MPa	ISO 527
断裂应力	150	MPa	ISO 527
断裂伸长率	2	%	ISO 527
无缺口简支梁冲击强度, +23°C	40	kJ/m²	ISO 179/1eU
Type of failure	C	-	-
无缺口简支梁冲击强度, -30°C	40	kJ/m²	ISO 179/1eU
Type of failure	C	-	-
简支梁缺口冲击强度, +23°C	6	kJ/m²	ISO 179/1eA
Type of failure	C	-	-
简支梁缺口冲击强度, -30°C	5	kJ/m²	ISO 179/1eA
Type of failure	C	-	-

热性能	数值	单位	试验方法
ISO数据			
熔融温度, 10°C/min	340	°C	ISO 11357-1/-3
热变形温度, 1.80 MPa	320	°C	ISO 75-1/-2
热变形温度, 0.45 MPa	337	°C	ISO 75-1/-2
维卡软化温度, 50°C/h 50N	335	°C	ISO 306
线性热膨胀系数, 平行	20	E-6/K	ISO 11359-1/-2
1.5mm名义厚度时的燃烧性	V-0	class	UL 94
测试用试样的厚度	1.6	mm	-

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燃烧性 - 氧指数	44	%	ISO 4589-1/-2
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电性能	数值	单位	试验方法
ISO数据			
相对介电常数, 100Hz	5.9	-	IEC 62631-2-1
相对介电常数, 1MHz	4.9	-	IEC 62631-2-1
介质损耗因子, 100Hz	700	E-4	IEC 62631-2-1
介质损耗因子, 1MHz	200	E-4	IEC 62631-2-1
体积电阻率	100000	Ohm*m	IEC 62631-3-1
表面电阻率	1000000	Ohm	IEC 62631-3-2

其它性能	数值	单位	试验方法
ISO数据			
吸水性	0.4	%	类似ISO 62
密度	1450	kg/m³	ISO 1183

试样制备条件	数值	单位	试验方法
ISO数据			
注塑, 熔体温度	380	°C	ISO 294
注塑, 模具温度	180	°C	ISO 294
注塑, 注射速度	200	mm/s	ISO 294
注塑, 保压压力	120	MPa	ISO 294

特征

加工方法	耐化学试剂
注塑	通用耐化学性
供货形式	
粒料	

耐化学性

酸类

- ✓ 醋酸 (5g/100g) (23°C)
- ✓ 柠檬酸溶液 (10g/100g) (23°C)
- ✓ 盐酸 (36g/100g) (23°C)
- ✗ 硝酸 (40g/100g) (23°C)
- ✓ 硫酸 (5g/100g) (23°C)
- ✓ 铬酸溶液 (40g/100g) (23°C)

碱类

- ✓ 氢氧化钠溶液 (35g/100g) (23°C)
- ✓ 氢氧化钠溶液 (1g/100g) (23°C)
- ✓ 氨水(氢氧化铵) (10g/100g) (23°C)

醇类

- ✓ 异丙醇 (23°C)
- ✓ 甲醇 (23°C)
- ✓ 乙醇 (23°C)

碳氢化合物

- ✓ 正乙烷 (23°C)
- ✓ 甲苯 (23°C)
- ✓ 异辛烷 (23°C)

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酮类

- ✓ 丙酮 (23°C)

醚类

- ✓ (二)乙醚 (23°C)

矿物油

- ✓ SAE 10W40号多效润滑油 (23°C)
- ✓ 绝缘油 (23°C)

标准燃油

- ✓ 不含酒精的标准燃油(优先使用C类ISO 1817 燃油) (23°C)
- ✓ 含酒精的标准燃油(优先使用4号ISO 1817 燃油) (23°C)
- ✓ 柴油(优先使用F类ISO 1817液体) (23°C)

盐溶液

- ✓ 氯化钠溶液(10g/100g) (23°C)
- ✓ 次氯化钠溶液 (10g/100g) (23°C)
- ✓ 碳酸钠溶液 (20g/100g) (23°C)
- ✓ 碳酸钠溶液 (2g/100g) (23°C)
- ✓ 氯化锌溶液 (50g/100g) (23°C)

其它

- ✓ 乙酸乙酯 (23°C)
 - ✓ 过氧化氢 (23°C)
 - ✓ 乙二醇水溶液 (50g/100g) (108°C)
 - ✓ 水 (23°C)
 - ✓ 去离子水 (90°C)
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