

Product Information

# VESTAKEEP® Easy Slide 2

## CARBON FIBER-REINFORCED, WEAR AND FRICTION MODIFIED POLYETHER ETHER KETONE



**VESTAKEEP® Easy Slide 2** is a carbon fiber-reinforced, wear and friction modified polyether ether ketone for injection molding.

The semi-crystalline material features superior mechanical, thermal and chemical resistance. Parts made from VESTAKEEP® Easy Slide 2 are flame resistant.

Due to the self-lubricating effect, the VESTAKEEP® Easy Slide 2 can be used as sliding bearings, thrust washers, sealings or other transmission parts.

The properties of the VESTAKEEP® Easy Slide 2 are not based on the addition of per- and polyfluoroalkyl substances (PFAS), a declaration of conformity is available upon request.

The material can be processed on common injection molding machines for thermoplastics.

During the injection molding process a melt temperature between 380 °C and 400 °C is recommended. The mold temperature should be within a range of 160 °C to 200 °C, preferably 180 °C.

VESTAKEEP® Easy Slide 2 is supplied as granules in 25 kg boxes with moisture barrier 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.

For information about processing of VESTAKEEP® please follow the general recommendations in our brochure "VESTAKEEP® PEEK - Processing guidelines".

The use of colorants may affect property values.

The results shown have been generated from a low number of production lots. Therefore, they are preliminary and not yet the result of a statistical evaluation.

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](mailto:EVONIK-HP@EVONIK.COM) OR VISIT OUR PRODUCT AT [WWW.INDUSTRIAL.VESTAKEEP.COM](http://WWW.INDUSTRIAL.VESTAKEEP.COM)

### Key Features

#### Industrial Sector

Automotive and Mobility, Industry and Engineering, Energy, Oil and Gas

#### Processing

Injection molding

#### Resistance to

Wear / abrasion

#### Electrical

Conductive, ESD – Electro-Static-Discharge

**Delivery form**

Pellets, Granules

**Additives**

Carbon fibers, Mineral fillers

**Mechanical properties ISO**

	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Tensile modulus	<b>13800 / -</b>	MPa	ISO 527
Stress at break	<b>151 / -</b>	MPa	ISO 527
Strain at break, B	<b>1.7 / -</b>	%	ISO 527
Nominal strain at break, tB	<b>2.1 / -</b>	%	ISO 527
Charpy impact strength, +23°C	<b>27.6 / -</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Type of failure	<b>C / -</b>	-	-
Charpy impact strength, -30°C	<b>24.5 / -</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Type of failure	<b>C / -</b>	-	-
Charpy notched impact strength, +23°C	<b>3.7 / -</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C / -</b>	-	-
Charpy notched impact strength, -30°C	<b>3.4 / -</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C / -</b>	-	-
Flexural modulus, 23°C	<b>11900 / -</b>	MPa	ISO 178
Flexural strain at flexural strength, 23°C	<b>3.5 / -</b>	%	ISO 178
Flexural stress at break, 23°C	<b>213 / -</b>	MPa	ISO 178
Flexural strain at break, 23°C	<b>2.1 / -</b>	%	ISO 178

**Thermal properties**

	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Melting temperature	<b>342 / *</b>	°C	ISO 11357-1/-3
Glass transition temperature, DSC	<b>161 / *</b>	°C	ISO 11357-1/-2
Glass transition temperature, 2 nd heating, midpoint	<b>148 / *</b>	°C	ISO 11357
Temp. of deflection under load A, 1.80 MPa	<b>297 / *</b>	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	<b>337 / *</b>	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	<b>342 / *</b>	°C	ISO 306

Vicat softening temperature B, 50 N, 50 K/h	<b>331 / *</b>	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	<b>14.5 / *</b>	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	<b>40.5 / *</b>	E-6/K	ISO 11359-1/-2

<b>Physical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Density	<b>1550 / -</b>	kg/m <sup>3</sup>	ISO 1183
Water absorption	<b>0.21 / *</b>	%	Sim. to ISO 62
Shore D hardness	<b>89<sup>[1]</sup> / -</b>	-	ISO 7619-1

1: 1 s / 3 s / 15 s

<b>Burning Behav.</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Oxygen index	<b>50<sup>[2]</sup> / *</b>	%	ISO 4589-1/-2

2: > 50

<b>Electrical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Volume resistivity, V	<b>280000 / -</b>	Ohm*m	IEC 62631-3-1
Surface resistivity, D	<b>1.65E5 / -</b>	Ohm per square	IEC 62631-3-2

<b>Rheological properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Melt volume-flow rate, MVR	<b>58.2 / *</b>	cm <sup>3</sup> /10min	ISO 1133
Temperature	<b>400 / *</b>	°C	-
Load	<b>21.6 / *</b>	kg	-
Molding shrinkage, parallel	<b>0.3 / *</b>	%	ISO 294-4, 2577
Molding shrinkage, normal	<b>0.6 / *</b>	%	ISO 294-4, 2577
Mold temperature	<b>180 / *</b>	°C	-
Melt temperature	<b>380 / *</b>	°C	-
Melt viscosity, at 100 1/s	<b>1330 / *</b>	Pa s	-
Temperature	<b>400 / *</b>	°C	-
Flow length, flow spiral	<b>245</b>	mm	Evonik standard

Flow front velocity, flow spiral	<b>950</b>	mm/s	Evonik standard
Flow cross section	<b>6 x 3</b>	mm <sup>2</sup>	Evonik standard
Mold temperature, flow spiral	<b>180</b>	°C	Evonik standard
Melt temperature, flow spiral	<b>400</b>	°C	Evonik standard
Injection pressure, flow spiral	<b>1000</b>	bar	Evonik standard

<b>Processing Recommendation Injection Molding</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Melt temperature	<b>380</b>	°C	-
Mold temperature	<b>180</b>	°C	-
Feed temperature	<b>50</b>	°C	-
Zone 1	<b>370</b>	°C	-
Zone 2	<b>380</b>	°C	-
Zone 3	<b>380</b>	°C	-
Zone 4	<b>380</b>	°C	-
Zone 5	<b>375</b>	°C	-
Nozzle temperature	<b>375</b>	°C	-
Circumferential speed	<b>200</b>	mm/s	-
Back pressure	<b>5</b>	MPa	-
Holding pressure	<b>120</b>	MPa	-

### Characteristics

#### Special Characteristics

PTFE-free

#### Features

Low coefficient of friction, Increased abrasion resistance

#### Color

Black

#### Additives

Inorganic fillers

#### Delivery form

Cylindrical pellets

#### Chemical Resistance

Oil resistance

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