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.

Key Features

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

Resistance to
Wear / abrasion

Processing
Injection molding

Delivery form
Pellets, Granules

Electrical
Conductive, ESD – Electro-Static-Discharge

Additives
Carbon fibers, Mineral fillers

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	**13800 / -**	MPa	ISO 527
Stress at break	**151 / -**	MPa	ISO 527
Strain at break, B	**1.7 / -**	%	ISO 527
Nominal strain at break, tB	**2.1 / -**	%	ISO 527
Charpy impact strength, +23°C	**27.6 / -**	kJ/m²	ISO 179/1eU
Type of failure	**C / -**	-	-
Charpy impact strength, -30°C	**24.5 / -**	kJ/m²	ISO 179/1eU
Type of failure	**C / -**	-	-
Charpy notched impact strength, +23°C	**3.7 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -30°C	**3.4 / -**	kJ/m²	ISO 179/1eA
Type of failure	**C / -**	-	-
Flexural modulus, 23°C	**11900 / -**	MPa	ISO 178
Flexural strain at flexural strength, 23°C	**3.5 / -**	%	ISO 178
Flexural stress at break, 23°C	**213 / -**	MPa	ISO 178
Flexural strain at break, 23°C	**2.1 / -**	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	**342 / ***	°C	ISO 11357-1/-3
Glass transition temperature, DSC	**161 / ***	°C	ISO 11357-1/-2
Glass transition temperature, 2 nd heating, midpoint	**148 / ***	°C	ISO 11357
Temp. of deflection under load A, 1.80 MPa	**297 / ***	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**337 / ***	°C	ISO 75-1/-2

Vicat softening temperature A, 10 N, 50 K/h	**342 / ***	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**331 / ***	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**14.5 / ***	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**40.5 / ***	E-6/K	ISO 11359-1/-2

Physical properties	**dry / cond**	**Unit**	**Test Standard**
Density	**1550 / -**	kg/m³	ISO 1183
Water absorption	**0.21 / ***	%	Sim. to ISO 62
Shore D hardness	**89 / -**	-	ISO 7619-1

Burning Behav.	**dry / cond**	**Unit**	**Test Standard**
Oxygen index	**50 / ***	%	ISO 4589-1/-2

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

Rheological properties	**dry / cond**	**Unit**	**Test Standard**
Melt volume-flow rate, MVR	**58.2 / ***	cm³/10min	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	-
Melt temperature	**380 / ***	°C	-
Melt viscosity, at 100 1/s	**1330 / ***	Pa s	-
Temperature	**400 / ***	°C	-
Flow length, flow spiral	**245**	mm	Evonik standard
Flow front velocity, flow spiral	**950**	mm/s	Evonik standard

Flow cross section	**6 x 3**	mm^2	Evonik standard
Mold temperature, flow spiral	**180**	°C	Evonik standard
Melt temperature, flow spiral	**400**	°C	Evonik standard
Injection pressure, flow spiral	**1000**	bar	Evonik standard

Characteristics

Special Characteristics
PTFE-free

Additives
Inorganic fillers

Features
Low coefficient of friction, Increased abrasion resistance

Delivery form
Cylindrical pellets

Color
Black

Chemical Resistance
Oil resistance

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