

Product Information

# VESTAKEEP® 4000 G BK

## HIGH VISCOSITY, UNREINFORCED POLYETHER ETHER KETONE



**VESTAKEEP® 4000 G BK** is a high viscosity, unreinforced polyether ether ketone for injection molding and extrusion.

The semi-crystalline polymer features superior, thermal and chemical resistance. Parts made from VESTAKEEP® 4000 G BK are of low flammability.

VESTAKEEP® 4000 G BK can be processed by common 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 G BK 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 the 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. Therefore they must not be used to establish specifications.

For information about processing VESTAKEEP® 4000 G BK, 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.

### Key Features

#### Processing

Injection molding

#### Delivery form

Pellets, Granules

#### Resistance to

Heat (thermal stability), Fire / burn

#### Conformity

Food contact

#### Additives

Unfilled

<b>Mechanical properties ISO</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Tensile modulus	<b>3500</b>	MPa	ISO 527
Tensile strength	<b>95</b>	MPa	ISO 527
Yield stress	<b>95</b>	MPa	ISO 527
Yield strain	<b>5</b>	%	ISO 527
Stress at break	<b>77</b>	MPa	ISO 527
Nominal strain at break, tB	<b>30</b>	%	ISO 527
Charpy impact strength, +23°C	<b>N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	<b>N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	<b>7</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-
Charpy notched impact strength, -30°C	<b>6</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-

<b>Thermal properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Melting temperature	<b>340</b>	°C	ISO 11357-1/-3
Vicat softening temperature A, 10 N, 50 K/h	<b>335</b>	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	<b>305</b>	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	<b>60</b>	E-6/K	ISO 11359-1/-2
Melting Temperature	<b>340</b>	°C	ASTM D 3418

<b>Physical properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Density	<b>1300</b>	kg/m <sup>3</sup>	ISO 1183
Density	<b>1300</b>	kg/m <sup>3</sup>	ASTM D 792

<b>Burning Behav.</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Burnin behav. at thickness h	<b>V-0</b>	class	IEC 60695-11-10
Thickness tested	<b>3.2</b>	mm	-

**Electrical properties**

	dry	Unit	Test Standard
Relative permittivity, 1MHz	<b>2.8</b>	-	IEC 62631-2-1
Dielectric strength, AC, S20/P50	<b>16</b>	kV/mm	Sim. to IEC 60243-1
CTI, test solution A, 50 drops value	<b>200</b>	-	IEC 60112
Assessment of the insulation group	<b>III a</b>	-	DIN EN 60664-1

**Rheological properties**

	dry	Unit	Test Standard
Melt volume-flow rate, MVR	<b>10</b>	cm <sup>3</sup> /10min	ISO 1133
Temperature	<b>380</b>	°C	-
Load	<b>5</b>	kg	-
Molding shrinkage, parallel	<b>0.9</b>	%	ISO 294-4, 2577
Molding shrinkage, normal	<b>1.1</b>	%	ISO 294-4, 2577

**Test specimen production**

	dry	Unit	Test Standard
Injection Molding, melt temperature	<b>380</b>	°C	ISO 294
Injection Molding, mold temperature	<b>180</b>	°C	ISO 294
Injection Molding, injection velocity	<b>200</b>	mm/s	ISO 294

**Characteristics**
**Special Characteristics**

Semi-crystalline, High viscosity

**Color**

Black

**Chemical Resistance**

General chemical resistance