

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.

### Key Features

**Processing**

Injection molding

**Delivery form**

Pellets, Granules

**Resistance to**

Heat (thermal stability), Fire / burn

**Conformity**

Food contact

**Additives**

Unfilled

Mechanical properties ISO	dry	Unit	Test Standard
Tensile modulus	<b>508000</b>	psi	ISO 527
Tensile strength	<b>13800</b>	psi	ISO 527
Yield stress	<b>13800</b>	psi	ISO 527
Yield strain	<b>5</b>	%	ISO 527
Stress at break	<b>11200</b>	psi	ISO 527
Nominal strain at break, tB	<b>30</b>	%	ISO 527
Charpy impact strength, +23°C	<b>N</b>	ftlb/in <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	<b>N</b>	ftlb/in <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	<b>3.33</b>	ftlb/in <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-
Charpy notched impact strength, -30°C	<b>2.85</b>	ftlb/in <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-

Thermal properties	dry	Unit	Test Standard
Melting temperature	<b>644</b>	°F	ISO 11357-1/-3
Vicat softening temperature A, 10 N, 50 K/h	<b>635</b>	°F	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	<b>581</b>	°F	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	<b>3.33E-5</b>	in/in/°F	ISO 11359-1/-2
Melting Temperature	<b>644</b>	°F	ASTM D 3418

Physical properties	dry	Unit	Test Standard
Density	<b>1.3</b>	g/cm <sup>3</sup>	ISO 1183
Density	<b>1.3</b>	g/cm <sup>3</sup>	ASTM D 792

Burning Behav.	dry	Unit	Test Standard
Burnin behav. at thickness h	<b>V-0</b>	class	IEC 60695-11-10
Thickness tested	<b>0.1260</b>	in	-

Electrical properties	dry	Unit	Test Standard
Relative permittivity, 1MHz	2.8	-	IEC 62631-2-1
Dielectric strength, AC, S20/P50	406	V/mil	Sim. to IEC 60243-1
CTI, test solution A, 50 drops value	200	-	IEC 60112
Assessment of the insulation group	III a	-	DIN EN 60664-1

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

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	716	°F	ISO 294
Injection Molding, mold temperature	356	°F	ISO 294
Injection Molding, injection velocity	7.87	in/s	ISO 294

## Characteristics

### Special Characteristics

Semi-crystalline, High viscosity

### Color

Black

### Chemical Resistance

General chemical resistance