

Product Information

**VESTAKEEP® DC 4400 G BK**

**BLACK POLYETHER ETHER KETONE FOR DENTAL APPLICATIONS**



VESTAKEEP® DC4400 G BK is a black, high viscosity polyether ether ketone (PEEK) resin.

**Biocompatibility of VESTAKEEP® Dental**

For VESTAKEEP® DC4400 G BK, biocompatibility is designed for permanent mucous membrane contact. The compound composition is optimised for high biocompatibility and superior mechanical, thermal and chemical resistance.

**Processing of VESTAKEEP® Dental**

VESTAKEEP® DC4400 G BK can be processed by common melt processing techniques like injection molding and extrusion.

For injection molding, we recommend a melt temperature in the 380°C to 400°C range. The mold temperature should be within 160°C to 200°C, preferably 180°C.

**Delivery of VESTAKEEP® Dental**

VESTAKEEP® DC4400 G BK is supplied as granules in 5 and 25 kg boxes with moisture-proof polyethylene liners.

**Key Features**

**Industrial Sector**

Medical Devices

**Resistance to**

Heat (thermal stability)

**Processing**

Injection molding

**Conformity**

Biocompatibility, Medical application

**Delivery form**

Pellets, Granules

**Mechanical properties ISO**

	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
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

Nominal strain at break, tB	<b>20</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>	-	-

<b>Thermal properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
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>2.5E-5</b>	in/in/°F	ISO 11359-1/-2

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

<b>Rheological properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
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

<b>Test specimen production</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Injection Molding, melt temperature	<b>716</b>	°F	ISO 294
Injection Molding, mold temperature	<b>356</b>	°F	ISO 294

**Characteristics**

**Applications**

Dental applications

**Special Characteristics**

Semi-crystalline, High viscosity

**Regulatory**

Cytotoxicity ISO 10993-5

**Color**

Black

**Chemical Resistance**

General chemical resistance