

## 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.

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.EVONIK.COM/MEDICAL-TECHNOLOGY](http://WWW.EVONIK.COM/MEDICAL-TECHNOLOGY)

**Key Features****Industrial Sector**

Medical Devices

**Processing**

Injection molding

**Delivery form**

Pellets, Granules

**Resistance to**

Heat (thermal stability)

**Conformity**

Biocompatibility, Medical application

**Mechanical properties ISO**

Tensile modulus

**dry**

**3500**

**Unit**

MPa

**Test Standard**

ISO 527

Tensile strength

**95**

MPa

ISO 527

Yield stress

**95**

MPa

ISO 527

Yield strain

**5**

%

ISO 527

|                                       |           |                   |             |
|---------------------------------------|-----------|-------------------|-------------|
| Nominal strain at break, tB           | <b>20</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>45</b>  | E-6/K       | ISO 11359-1/-2       |

| <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             |

| <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>380</b> | °C          | ISO 294              |
| Injection Molding, mold temperature | <b>180</b> | °C          | ISO 294              |

## Characteristics

### Applications

Dental applications

### Special Characteristics

Semi-crystalline, High viscosity

### Regulatory

Cytotoxicity ISO 10993-5

### Color

Black

### Chemical Resistance

General chemical resistance

This information and all technical and other advice are based on Evonik's present knowledge and experience. However, Evonik assumes no liability for such information or advice, including the extent to which such information or advice may relate to third party intellectual property rights. Evonik reserves the right to make any changes to information or advice at any time, without prior or subsequent notice. Evonik disclaims all representations and warranties, whether express or implied, and shall have no liability for, merchantability of the product or its fitness for a particular purpose (even if Evonik is aware of such purpose), or otherwise. EVONIK SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. It is the customer's sole responsibility to arrange for inspection and testing of all products by qualified experts. Reference to trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used.

\* is a registered trademark of Evonik Industries AG or one of its subsidiaries

**Evonik Operations GmbH**  
**Smart Materials**  
**High Performance Polymers**  
 45772 Marl / Germany  
 Tel: +49 2365 49-9878  
[evonik-hp@evonik.com](mailto:evonik-hp@evonik.com)  
[www.plastics-database.com](http://www.plastics-database.com)