

Product Information

VESTAKEEP® DC 4460 R

X-RAY OPAQUE, TOOTH-COLORED POLYETHER ETHER KETONE FOR DENTAL APPLICATIONS - STOCKSHAPE



VESTAKEEP® DC4460 R is a tooth-colored polyether ether ketone (PEEK) grade that is especially designed for removable and fixed dentures, crowns and bridges.

VESTAKEEP® DC4460 R contains 6% Barium sulphate to render it x-ray opaque.

Biocompatibility

For VESTAKEEP® DC4460 R, biocompatibility has been tested following ISO 10993-1 recommendations for permanent mucous membrane contact.

The compound composition is optimized for high biocompatibility and superior mechanical, thermal and chemical resistance.

Biocompatibility test reports available for VESTAKEEP® DC4460 R

| Standard | Description |
|--------------|--|
| ISO 10993-03 | Genotoxicity: Salmonella Typhimurium Reverse Mutation Test (Ames Test) |
| ISO 10993-05 | Cytotoxicity: Quantitative Growth Inhibition Test |
| ISO 10993-10 | Irritation: Intracutaneous Reactivity |
| ISO 10993-10 | Sensitization: Local Lymph Node Assay |
| ISO 10993-11 | Acute Systemic Toxicity |
| ISO 10993-11 | Subacute / Subchronic Toxicity 14 days |
| ISO 10993-18 | Extraction Tests |
| USP Class VI | Acute Systemic Toxicity Intracutaneous Reactivity Muscle Implantation |

Delivery

VESTAKEEP® DC4460 R rods are available in following diameter and length.

Dimensions of VESTAKEEP® DC4460 R

| Diameter | Standard length |
|----------|-----------------|
| 100 mm | 1000 mm |

Other custom dimensions are available on request.

Key Features

Industrial Sector

Medical Devices

Processing

Machining

Delivery form

Stock shape (rods and plates)

Optics

X-ray opaque

Resistance to

Heat (thermal stability), Hydrolysis / hot water, Wear / abrasion, Fatigue resistance

Conformity

Biocompatibility, Medical application

Mechanical properties ISO

| | dry | Unit | Test Standard |
|-----------------------------|-------------|-------------------|---------------|
| Tensile modulus | 5000 | MPa | ISO 527 |
| Yield stress | 110 | MPa | ISO 527 |
| Yield strain | 4.2 | % | ISO 527 |
| Nominal strain at break, tB | 10 | % | ISO 527 |
| Izod Impact notched, 23°C | 5.1 | kJ/m ² | ISO 180/1A |
| Flexural modulus, 23°C | 5000 | MPa | ISO 178 |
| Flexural strength, 23°C | 175 | MPa | ISO 178 |

Thermal properties

| | dry | Unit | Test Standard |
|--|------------|-------|----------------|
| Temp. of deflection under load A, 1.80 MPa | 155 | °C | ISO 75-1/-2 |
| Temp. of deflection under load B, 0.45 MPa | 210 | °C | ISO 75-1/-2 |
| Vicat softening temperature A, 10 N, 50 K/h | 335 | °C | ISO 306 |
| Vicat softening temperature B, 50 N, 50 K/h | 305 | °C | ISO 306 |
| Coeff. of linear therm. expansion, 23°C to 55 °C, parallel | 45 | E-6/K | ISO 11359-1/-2 |

Physical properties

| | dry | Unit | Test Standard |
|------------------|-------------|-------------------|----------------|
| Density | 1580 | kg/m ³ | ISO 1183 |
| Water absorption | 0.4 | % | Sim. to ISO 62 |
| Density | 1520 | kg/m ³ | ASTM D 792 |

Characteristics

Special Characteristics

Semi-crystalline

Regulatory

US Pharmacopeia Class VI conformity

Color

Tooth-colored

Chemical Resistance

Acid resistance, Alkali resistance, Solvent resistance, Grease resistance, Hydrolytically stable, Oxidation resistance, General chemical resistance