

Product Information

**VESTAKEEP® DC 4420 R**

**WHITE PIGMENTED POLYETHER ETHER KETONE FOR DENTAL APPLICATIONS**



VESTAKEEP® DC4420 R is a white pigmented polyether ether ketone (PEEK) grade rod stock that is especially designed for removable and fixed dentures, crowns and bridges.

**Biocompatibility of VESTAKEEP® Dental**

For VESTAKEEP® DC4420 R, biocompatibility has been tested following ISO 10993-1 recommendations for permanent mucous membrane contact.

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

**Biocompatibility test reports available for VESTAKEEP® DC4420 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 of VESTAKEEP® Dental**

VESTAKEEP® DC4420 R rods are available in different diameters and lengths.

**Dimensions of VESTAKEEP® DC4420 R**

Diameter	Standard length
6 and 8 mm	3000 mm
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**

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	<b>4800</b>	MPa	ISO 527
Yield stress	<b>110</b>	MPa	ISO 527
Yield strain	<b>4</b>	%	ISO 527
Nominal strain at break, tB	<b>10</b>	%	ISO 527
Izod Impact notched, 23°C	<b>5.2</b>	kJ/m <sup>2</sup>	ISO 180/1A
Type of failure	<b>C</b>	-	-
Flexural modulus, 23°C	<b>4700</b>	MPa	ISO 178
Flexural strength, 23°C	<b>175</b>	MPa	ISO 178

**Thermal properties**

	dry	Unit	Test Standard
Temp. of deflection under load A, 1.80 MPa	<b>155</b>	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	<b>210</b>	°C	ISO 75-1/-2
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

**Physical properties**

	dry	Unit	Test Standard
Density	<b>1510</b>	kg/m <sup>3</sup>	ISO 1183
Water absorption	<b>0.4</b>	%	Sim. to ISO 62
Density	<b>1510</b>	kg/m <sup>3</sup>	ASTM D 792

Optical properties	dry	Unit	Test Standard
Color L	89	-	CIE
Color a	0.5	-	CIE
Color b	5	-	CIE

### Characteristics

#### Special Characteristics

Semi-crystalline

#### Regulatory

US Pharmacopeia Class VI conformity

#### Color

White

#### Delivery form

Rods Ø6-20mm,stan.lengths 3000mm, Rods  
Ø70-100mm,stan.lengths 1000mm

#### Chemical Resistance

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