

Product Information

VESTAKEEP® DC 4450 R

TOOTH-COLORED POLYETHER ETHER KETONE FOR DENTAL APPLICATIONS



VESTAKEEP® DC4450 R is a tooth-colored polyether ether ketone (PEEK) grade that is especially designed for removable and fixed dentures, crowns and bridges.

Biocompatibility of VESTAKEEP® Dental

For VESTAKEEP® DC4450 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® DC4450 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® DC4450 R rods are available in different diameters and lengths.

Dimensions of VESTAKEEP® DC4450 R

Diameter	Standard length
6 and 8 mm	3000 mm
100 mm	1000 mm

Other custom dimensions are available on request.

The values presented are typical or average values, they do not constitute a specification.

Key Features

Industrial Sector

Medical Devices

Processing

Machining

Delivery form

Stock shape (rods and plates)

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	4800	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	4800	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	1520	kg/m ³	ISO 1183
Water absorption	0.4	%	Sim. to ISO 62
Density	1520	kg/m ³	ASTM D 792

Optical properties

	dry	Unit	Test Standard
Color L	86	-	CIE

Color a	1.5	-	CIE
Color b	16	-	CIE

Characteristics

Special Characteristics

Semi-crystalline

Regulatory

US Pharmacopeia Class VI conformity

Color

Tooth-colored

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, Oxidation resistance, General
chemical resistance