

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.

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

VESTAKEEP®

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