

VESTAKEEP® DC4420 G



White pigmented polyether ether ketone for dental applications

VESTAKEEP® DC4420 G is a white pigmented, high viscosity polyether ether ketone (PEEK) resin that is especially designed for removable and fixed dentures, crowns and bridges.

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

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

VESTAKEEP® DC4420 G 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.

VESTAKEEP® DC4420 G is supplied as cylindrical pellets in 25kg boxes with polyethylene liners.

Biocompatibility test reports available for DC4420 G

Standard	Description
ISO10993-03	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

For further information, please contact us at evonik-hp@evonik.com.

Properties of VESTAKEEP® DC4420 G

Properties		Test method	Unit	Value
Density	23°C	ISO 1183	g/cm ³	1.49
Tensile test	23°C / 50% r.h.	ISO 527-1 ISO 527-2		
Stress at yield			MPa	95
Strain at yield			%	4.8
Strain at break			%	> 10
Tensile modulus		ISO 527-1 ISO 527-2	MPa	4100
CHARPY impact strength	23°C / 50% r.h.	ISO 179/1eU	kJ/m ²	N ¹⁾
CHARPY notched impact strength	23°C / 50% r.h.	ISO 179/1eA	kJ/m ²	6.8 C ¹⁾
Temperature of deflection under load				
Method A	1.8 MPa	ISO 75-1	°C	155
Method B	0.45 MPa	ISO 75-2	°C	210
Vicat softening temperature		ISO 306		
Method A	10N		°C	335
Method B	50N		°C	305
Linear thermal expansion longitudinal	23-55°C	ISO 11359	10 ⁻⁴ K ⁻¹	0.45
Melting range		ISO 11357		
DSC	2 nd heating		°C	approx. 340
Melt volume-flow rate (MVR)	380°C/5kg	ISO 1133	cm ³ /10min	9.5
Water absorption	saturation	ISO 62	%	0.4

¹⁾ C = Complete break, incl. hinge break H
N = No break

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