

Product Information

# VESTAKEEP® DC 4462 G

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



**VESTAKEEP® DC4462 G** is a tooth-colored, high viscosity polyether ether ketone (PEEK) resin that is especially designed for removable and fixed dentures, crowns and bridges.

VESTAKEEP® DC4462 G contains 15% barium sulphate to render it x-ray opaque.

### Biocompatibility

For VESTAKEEP® DC4462 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.

**Biocompatibility test reports available for VESTAKEEP® DC4462 G**

### Processing

VESTAKEEP® DC4462 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.

### Delivery

VESTAKEEP® DC4462 G is supplied as granules in 25 kg boxes with moisture-proof polyethylene liners.

### Key Features

**Industrial Sector**  
Medical Devices

**Processing**  
Injection molding

**Delivery form**  
Pellets, Granules

**Optics**  
X-ray opaque, 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	4100	MPa	ISO 527
Tensile strength	95	MPa	ISO 527
Yield stress	95	MPa	ISO 527
Yield strain	4.8	%	ISO 527
Stress at break	74	MPa	ISO 527
Strain at break, B	15	%	ISO 527
Charpy notched impact strength, +23°C	6.8	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	C	-	-

Thermal properties	dry	Unit	Test Standard
Melting temperature	340	°C	ISO 11357-1/-3
Glass transition temperature, 2 nd heating, onset	145	°C	ISO 11357
Glass transition temperature, 2 nd heating, midpoint	150	°C	ISO 11357
Recrystallization temperature, 10 K/min	285	°C	ISO 11357
Melting Temperature	340	°C	ASTM D 3418

Physical properties	dry	Unit	Test Standard
Density	1520	kg/m <sup>3</sup>	ISO 1183
Water absorption	0.4	%	Sim. to ISO 62
Density	1520	kg/m <sup>3</sup>	ASTM D 792

Optical properties	dry	Unit	Test Standard
Color L	84	-	CIE
Color a	2.5	-	CIE
Color b	20	-	CIE

Rheological properties	dry	Unit	Test Standard
Melt volume-flow rate, MVR	10	cm <sup>3</sup> /10min	ISO 1133

Temperature	<b>380</b>	°C	-
Load	<b>5</b>	kg	-

Polymer analytics	dry	Unit	Test Standard
Ash content	<b>25.4</b>	%	ISO 3451

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	<b>400</b>	°C	ISO 294
Injection Molding, mold temperature	<b>180</b>	°C	ISO 294
Injection Molding, injection velocity	<b>200</b>	mm/s	ISO 294

### 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, General chemical resistance