

Product Information

VESTAKEEP® Care M40 R

HIGH VISCOSITY, UNREINFORCED POLYETHER ETHER KETONE DESIGNED FOR THE MEDICAL DEVICE INDUSTRY



VESTAKEEP® Care is the ideal materials for the fabrication of medical devices with short time contact to human blood, tissue or bone for up to 30 days. VESTAKEEP® Care Grades have a good biocompatibility, processability and the option to pigment.

VESTAKEEP® Care M40 R are semi finished goods based on the high viscosity VESTAKEEP® Care M40 G polymer resin.

The semi-crystalline polymer features superior thermal and chemical resistance.

Biocompatibility of VESTAKEEP® Care

Biocompatibility was tested following ISO10993-1 recommendations for a surface medical device with up to 30 days body contact.

The material fulfills the requirements of USP<88> class VI.

Tests were performed by independent, certified laboratories.

Biocompatibility tests for VESTAKEEP® Care:

Delivery of VESTAKEEP® Care

VESTAKEEP® Care M40 R rods can be produced in various diameters ranging from 6 mm up to 100 mm. The standard length is 1 m. Other dimensions are also available upon request.

Mechanical properties are evaluated on stock shapes test bars and further values are evaluated on injection molded samples.

The results shown have been generated from a low number of production lots. Therefore, they are preliminary and not yet the result of a statistical evaluation. Therefore they must not be used to establish specifications.

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

Key Features

Industrial Sector

Medical Devices

Delivery form

Stock shape (rods and plates)

Resistance to

Heat (thermal stability), Hydrolysis / hot water, Wear / abrasion, Fatigue resistance, Oil / fuels

Optics
Opaque

Conformity
Biocompatibility, Medical application

Additives
Unfilled

| Mechanical properties ISO | dry | Unit | Test Standard |
|----------------------------------|-------------|-------------------|----------------------|
| Tensile modulus | 4050 | MPa | ISO 527 |
| Yield stress | 110 | MPa | ISO 527 |
| Yield strain | 5 | % | ISO 527 |
| Nominal strain at break, tB | 40 | % | ISO 527 |
| Izod Impact unnotched, 23°C | 5.5 | kJ/m ² | ISO 180/1U |
| Flexural modulus, 23°C | 4050 | 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 | 205 | °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 | 60 | E-6/K | ISO 11359-1/-2 |

| Physical properties | dry | Unit | Test Standard |
|----------------------------|-------------|-------------------|----------------------|
| Density | 1300 | kg/m ³ | ISO 1183 |
| Water absorption | 0.5 | % | Sim. to ISO 62 |
| Shore D hardness | 84 | - | ISO 7619-1 |
| Density | 1300 | kg/m ³ | ASTM D 792 |

| Burning Behav. | dry | Unit | Test Standard |
|------------------------------|------------|-------------|----------------------|
| Burnin behav. at thickness h | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 3.2 | mm | - |

Electrical properties

Relative permittivity, 1MHz

dry

2.8

Unit

-

Test Standard

IEC 62631-2-1

Rheological properties

Melt volume-flow rate, MVR

dry

11

Unit

cm³/10min

Test Standard

ISO 1133

Temperature

380

°C

-

Load

5

kg

-

Characteristics

Special Characteristics

Semi-crystalline

Regulatory

US Pharmacopeia Class VI conformity

Color

Natural color

Delivery form

Rods Ø6-20mm,stan.lengths 3000mm, Rods
 Ø25-60mm,stan.lengths 2000mm, Rods
 Ø70-100mm,stan.lengths 1000mm, Discs
 Ø98,4mm,thickness 12-30mm, Discs Ø99,5mm,thickness
 12-30mm, Discs Ø84,5mm,thickness 12-30mm

Chemical Resistance

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