

Product Information

VESTAKEEP® Care M20 G BK

MEDIUM 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 M20 G black is a medium viscosity, unreinforced polyether ether ketone for injection molding.

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:

Processing of VESTAKEEP® Care

VESTAKEEP® Care resins can be processed using all conventional melt processing techniques such as injection moulding, extrusion, and compression moulding.

VESTAKEEP® Care M20 G black can be processed by common machines for thermoplastics. We recommend a melt temperature between 360°C and 380°C during the injection molding process. The mold temperature should be within a range of 160°C to 200°C, preferably 180°C.

Our technical experts would appreciate to give you support regarding the special requirements for the processing of VESTAKEEP® Care M20 G black.

Delivery of VESTAKEEP® Care

VESTAKEEP® Care M20 G black 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

Resistance to

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

Conformity

Biocompatibility, Medical application

Additives

Unfilled

Mechanical properties ISO

| | dry | Unit | Test Standard |
|---------------------------------------|---------------|----------------------|----------------------|
| Tensile modulus | 537000 | psi | ISO 527 |
| Yield stress | 14500 | psi | ISO 527 |
| Yield strain | 5 | % | ISO 527 |
| Nominal strain at break, tB | 40 | % | ISO 527 |
| Charpy impact strength, +23°C | N | ftlb/in ² | ISO 179/1eU |
| Charpy impact strength, -30°C | N | ftlb/in ² | ISO 179/1eU |
| Charpy notched impact strength, +23°C | 2.85 | ftlb/in ² | ISO 179/1eA |
| Type of failure | C | - | - |
| Charpy notched impact strength, -30°C | 2.85 | ftlb/in ² | ISO 179/1eA |
| Type of failure | C | - | - |

Thermal properties

| | dry | Unit | Test Standard |
|--|----------------|-------------|----------------------|
| Vicat softening temperature A, 10 N, 50 K/h | 635 | °F | ISO 306 |
| Vicat softening temperature B, 50 N, 50 K/h | 590 | °F | ISO 306 |
| Coeff. of linear therm. expansion, 23°C to 55 °C, parallel | 3.33E-5 | in/in/°F | ISO 11359-1/-2 |

Physical properties

| | dry | Unit | Test Standard |
|---------|------------|-------------------|----------------------|
| Density | 1.3 | g/cm ³ | ISO 1183 |
| Density | 1.3 | g/cm ³ | ASTM D 792 |

| Burning Behav. | dry | Unit | Test Standard |
|------------------------------|---------------|-------|-----------------|
| Burnin behav. at thickness h | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 0.1260 | in | - |

| Electrical properties | dry | Unit | Test Standard |
|--------------------------------------|-----------------|-------|----------------|
| Volume resistivity, V | >1E13 | Ohm*m | IEC 62631-3-1 |
| Relative permittivity, 1MHz | 2.8 | - | IEC 62631-2-1 |
| CTI, test solution A, 50 drops value | 200 | - | IEC 60112 |
| Assessment of the insulation group | III a | - | DIN EN 60664-1 |

| Rheological properties | dry | Unit | Test Standard |
|-----------------------------|------------|------------------------|-----------------|
| Melt volume-flow rate, MVR | 70 | cm ³ /10min | ISO 1133 |
| Temperature | 380 | °C | - |
| Load | 5 | kg | - |
| Molding shrinkage, parallel | 1.1 | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 1.1 | % | ISO 294-4, 2577 |

| Test specimen production | dry | Unit | Test Standard |
|---------------------------------------|-------------|------|---------------|
| Injection Molding, melt temperature | 716 | °F | ISO 294 |
| Injection Molding, mold temperature | 356 | °F | ISO 294 |
| Injection Molding, injection velocity | 7.87 | in/s | ISO 294 |

Characteristics

Applications
Encapsulation

Special Characteristics
Semi-crystalline

Regulatory
US Pharmacopeia Class VI conformity

Color
Black

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