

Product Information

VESTAKEEP® 1000 G

LOW- VISCOSITY, UNREINFORCED POLYETHER ETHER KETONE



VESTAKEEP® 1000 G is a low-viscosity, unreinforced polyether ether ketone for injection molding.

The semi-crystalline polymer features superior, thermal and chemical resistance. Parts made from VESTAKEEP® 1000 G are of low flammability.

VESTAKEEP® 1000 G can be processed by common injection 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.

VESTAKEEP® 1000 G is supplied as granules in 25 kg boxes with moisture-proof polyethylene liners.

Inside the original and undamaged packaging, the product has a shelf life of at least 2 years when stored in dry rooms at temperatures not exceeding 30°C.

Pigmentation may affect values.

For information about processing VESTAKEEP® 1000 G, please follow the general recommendations in our brochure "VESTAKEEP® PEEK Processing Guidelines".

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

FOR FURTHER INFORMATION PLEASE CONTACT US AT EVONIK-HP@EVONIK.COM OR VISIT OUR PRODUCT AT WWW.INDUSTRIAL.VESTAKEEP.COM

Key Features

Industrial Sector

Automotive and Mobility, Industry and Engineering

Resistance to

Fire / burn

Processing

Injection molding

Conformity

Food contact

Delivery form

Pellets, Granules

Additives

Unfilled

Mechanical properties ISO

Tensile modulus

Value

3900

Unit

MPa

Test Standard

ISO 527

Tensile strength

100

MPa

ISO 527

| | | | |
|---------------------------------------|------------|-------------------|-------------|
| Yield stress | 100 | MPa | ISO 527 |
| Yield strain | 5.5 | % | ISO 527 |
| Stress at break | 70 | MPa | ISO 527 |
| Nominal strain at break, tB | 10 | % | ISO 527 |
| Charpy impact strength, +23°C | 60 | kJ/m ² | ISO 179/1eU |
| Type of failure | C | - | - |
| Charpy impact strength, -30°C | 60 | kJ/m ² | ISO 179/1eU |
| Type of failure | C | - | - |
| Charpy notched impact strength, +23°C | 5 | kJ/m ² | ISO 179/1eA |
| Type of failure | C | - | - |
| Charpy notched impact strength, -30°C | 5 | kJ/m ² | ISO 179/1eA |
| Type of failure | C | - | - |

| Thermal properties | Value | Unit | Test Standard |
|--|--------------|-------------|----------------------|
| Melting temperature | 340 | °C | ISO 11357-1/-3 |
| Glass transition temperature, DSC | 150 | °C | ISO 11357-1/-2 |
| 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 | 310 | °C | ISO 306 |
| Coeff. of linear therm. expansion, 23°C to 55 °C, parallel | 60 | E-6/K | ISO 11359-1/-2 |
| Melting Temperature | 340 | °C | ASTM D 3418 |

| Physical properties | Value | Unit | Test Standard |
|----------------------------|--------------|-------------------|----------------------|
| Density | 1300 | kg/m ³ | ISO 1183 |
| Water absorption | 0.5 | % | Sim. to ISO 62 |
| Density | 1300 | kg/m ³ | ASTM D 792 |

| Burning Behav. | Value | Unit | Test Standard |
|---------------------------------------|--------------|-------------|----------------------|
| Burning behav. at 1.5 mm nom. thickn. | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 1.6 | mm | - |
| Oxygen index | 38 | % | ISO 4589-1/-2 |
| Limiting Oxygen Index | 38 | % | ASTM D 2863 |
| Glow Wire Flammability Index (GWFI) | 960 | °C | IEC 60695-2-12 |
| Glow Wire Ignition Temperature (GWIT) | 800 | °C | IEC 60695-2-13 |

| Electrical properties | Value | Unit | Test Standard |
|---------------------------------------|-----------------|-------------|----------------------|
| Volume resistivity, V | >1E13 | Ohm*m | IEC 62631-3-1 |
| Surface resistance, RSD | 1E14 | Ohm | IEC 62631-3-2 |
| Relative permittivity, 1MHz | 2.8 | - | IEC 62631-2-1 |
| Dielectric strength, AC, S20/P50 | 16 | kV/mm | Sim. to IEC 60243-1 |
| CTI, test solution A, 50 drops value | 200 | - | IEC 60112 |
| CTI, test solution A, 100 drops value | 175 | - | IEC 60112 |
| Assessment of the insulation group | III a | - | DIN EN 60664-1 |

| Rheological properties | Value | Unit | Test Standard |
|-------------------------------|--------------|------------------------|----------------------|
| Melt volume-flow rate, MVR | 150 | cm ³ /10min | ISO 1133 |
| Temperature | 380 | °C | - |
| Load | 5 | kg | - |
| Molding shrinkage, parallel | 0.9 | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 1.0 | % | ISO 294-4, 2577 |

| Test specimen production | Value | Unit | Test Standard |
|---------------------------------------|--------------|-------------|----------------------|
| Injection Molding, melt temperature | 380 | °C | ISO 294 |
| Injection Molding, mold temperature | 180 | °C | ISO 294 |
| Injection Molding, injection velocity | 200 | mm/s | ISO 294 |

Characteristics

Applications

Electrical and Electronical, Encapsulation

Special Characteristics

Semi-crystalline, Low viscosity

Color

Natural color

Additives

External lubrication

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