+135-3858-6433 (GuangDong)
+188-1699-6168 (ShangHai)
+852-6957-5415 (HongKong)

EVONIK Leading Beyond Chemistry

ALBIS

# VESTAKEEP® 5000 G

PEEK

Evonik Operations GmbH

**High viscosity, unreinforced polyether ether ketone**

**VESTAKEEP® 5000 G** is a high viscosity, unreinforced polyether ether ketone for injection molding and extrusion.

The semi-crystalline polymer features superior, thermal and chemical resistance. Parts made from VESTAKEEP® 5000 G are of low flammability.

VESTAKEEP® 5000 G can be processed by common machines for thermoplastics. We recommend a melt temperature between 370 °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® 5000 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.

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.

| Rheological properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Melt volume-flow rate, MVR | 7 | cm³/10min | ISO 1133 |
| Temperature | 380 | °C | - |
| Load | 5 | kg | - |
| Molding shrinkage, parallel | 0.9 | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 1.1 | % | ISO 294-4, 2577 |

| Mechanical Properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Tensile Modulus | 3500 | MPa | ISO 527 |
| Yield stress | 95 | MPa | ISO 527 |
| Yield strain | 5 | % | ISO 527 |
| Nominal strain at break | 35 | % | ISO 527 |
| Impact Strength (Charpy), +23 °C | no break | kJ/m² | ISO 179/1eU |
| Impact Strength (Charpy), -30 °C | no break | kJ/m² | ISO 179/1eU |
| Notched Impact Strength (Charpy), +23 °C | 9 | kJ/m² | ISO 179/1eA |
| Type of failure | C | - | - |
| Notched Impact Strength (Charpy), -30 °C | 8 | kJ/m² | ISO 179/1eA |
| Type of failure | C | - | - |

| Thermal Properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Melting Temperature (10 °C/min) | 340 | °C | ISO 11357-1/-3 |
| Glass Transition Temperature (10 °C/min) | 152 | °C | ISO 11357-1/-2 |
| Temp. of deflection under load (1.80 MPa) | 150 | °C | ISO 75-1/-2 |
| Temp. of deflection under load (0.45 MPa) | 205 | °C | ISO 75-1/-2 |
| Vicat softening temperature, 50 °C/h 50N | 305 | °C | ISO 306 |
| Coeff. of Linear Therm. Expansion, parallel | 60 | E-6/K | ISO 11359-1/-2 |
| Oxygen index | 36 | % | ISO 4589-1/-2 |

| Electrical Properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Relative permittivity, 1MHz | 2.8 | - | IEC 62631-2-1 |
| Volume Resistivity | >1E13 | Ohm*m | IEC 62631-3-1 |
| Electric Strength | 32.9 | kV/mm | IEC 60243-1 |
| Comparative tracking index | 200 | - | IEC 60112 |

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| Other Properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Water Absorption | 0.5 | % | Sim. to ISO 62 |
| Humidity absorption | 0.12 | % | Sim. to ISO 62 |
| Density | 1300 | kg/m³ | ISO 1183 |

| Test specimen production | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| 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

**Processing**
Injection Molding, Other Extrusion

**Features**
Thermal Stability

**Delivery form**
Pellets

**Chemical Resistance**
General Chemical Resistance