VESTAKEEP® 2000 G

PEEK

Evonik Operations GmbH

Medium viscosity, unreinforced polyether ether ketone

VESTAKEEP® 2000 G is a medium viscosity, unreinforced polyether ether ketone for injection molding.

The semi-crystalline polymer features superior, thermal and chemical resistance. Parts made from VESTAKEEP® 2000 G are of low flammability.

VESTAKEEP® 2000 G can be processed on common injection molding 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® 2000 G is supplied as granules in 25 kg boxes with moisture-proof polyethylene inliners.

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® 2000 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

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	70	cm³/10min	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

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	3700	MPa	ISO 527
Yield stress	100	MPa	ISO 527
Yield strain	5	%	ISO 527
Nominal strain at break	20	%	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	6	kJ/m²	ISO 179/1eA
Type of failure	C	-	-
Notched Impact Strength (Charpy), -30 °C	6	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)	150	°C	ISO 11357-1/-2
Temp. of deflection under load (1.80 MPa)	155	°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	310	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	60	E-6/K	ISO 11359-1/-2
UL recognition	yes	-	-
Oxygen index	38	%	ISO 4589-1/-2

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	2.8	-	IEC 62631-2-1

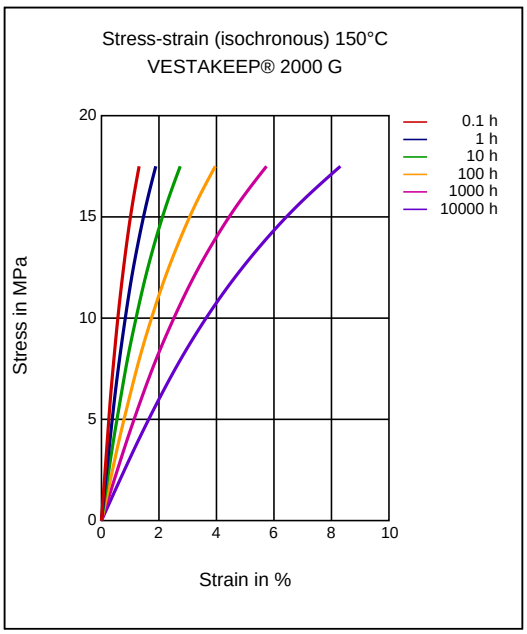
Relative permittivity, 1MHz	2.8	-	IEC 62631-2-1
Dissipation Factor, 1MHz	50	E-4	IEC 62631-2-1
Volume Resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E15	Ohm	IEC 62631-3-2
Electric Strength	32.6	kV/mm	IEC 60243-1
Comparative tracking index	200	-	IEC 60112

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

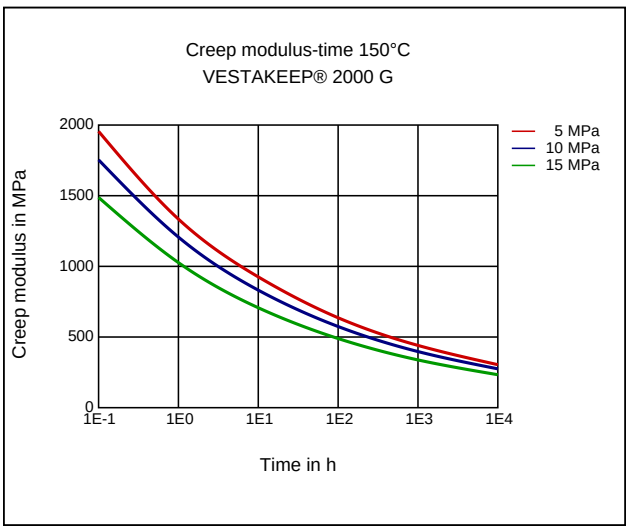
Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	380	°C	ISO 294
Injection Molding, mold temperature	180	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294
Injection Molding, pressure at hold	120	MPa	ISO 294

Diagrams

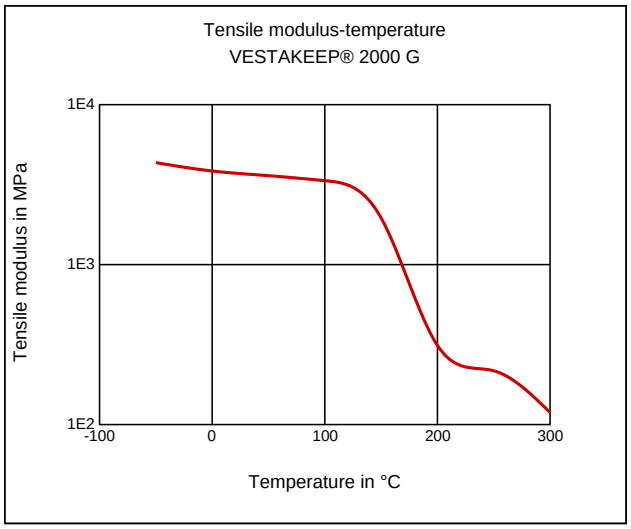
Stress-strain (isochronous) 150 °C



Creep modulus-time 150 °C



Tensile Modulus-Temperature



Characteristics

Processing
Injection Molding, Film Extrusion, Other Extrusion

Special Characteristics
Heat aging stabilized

Delivery form
Pellets

Chemical Media Resistance

Acids

- ✔ Acetic Acid (5% by mass) (23°C)
- ✔ Citric Acid solution (10% by mass) (23°C)
- ✔ Hydrochloric Acid (36% by mass) (23°C)
- ✖ Nitric Acid (40% by mass) (23°C)
- ✔ Sulfuric Acid (38% by mass) (23°C)
- ✔ Sulfuric Acid (5% by mass) (23°C)
- ✔ Chromic Acid solution (40% by mass) (23°C)

Bases

- ✔ Sodium Hydroxide solution (35% by mass) (23°C)
- ✔ Sodium Hydroxide solution (1% by mass) (23°C)
- ✔ Ammonium Hydroxide solution (10% by mass) (23°C)

Alcohols

- ✔ Isopropyl alcohol (23°C)
- ✔ Methanol (23°C)
- ✔ Ethanol (23°C)

Hydrocarbons

- ✔ n-Hexane (23°C)
- ✔ Toluene (23°C)
- ✔ iso-Octane (23°C)

Ketones

- ✔ Acetone (23°C)

Ethers

- ✔ Diethyl ether (23°C)

Mineral oils

- ✔ SAE 10W40 multigrade motor oil (23°C)
- ✔ Insulating Oil (23°C)

Standard Fuels

- ✔ Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)
- ✔ Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)
- ✔ Diesel fuel (pref. ISO 1817 Liquid F) (23°C)

Salt solutions

- ✔ Sodium Chloride solution (10% by mass) (23°C)
- ✔ Sodium Hypochlorite solution (10% by mass) (23°C)
- ✔ Sodium Carbonate solution (20% by mass) (23°C)
- ✔ Sodium Carbonate solution (2% by mass) (23°C)
- ✔ Zinc Chloride solution (50% by mass) (23°C)

Other

- ✔ Ethyl Acetate (23°C)
- ✔ Hydrogen peroxide (23°C)
- ✔ Ethylene Glycol (50% by mass) in water (108°C)
- ✔ Water (23°C)
- ✔ Deionized water (90°C)

Disclaimer