Product Information

VESTAKEEP® 3300 G

MEDIUM-VISCOSITY, UNREINFORCED POLYETHER ETHER KETONE



VESTAKEEP® 3300 G is a medium-viscosity, unreinforced polyether ether ketone for injection molding and extrusion.

The semi-crystalline polymer features superior thermal and chemical resistance. Parts made from VESTAKEEP® 3300G are of low flammability.

VESTAKEEP® 3300 G 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.

VESTAKEEP® 3300 G is supplied as granules in 25 kg boxes with moisture-proof polyethylene liners.

Pigmentation may affect values.

For information about processing VESTAKEEP® 3300 G, please follow the general recommendations in our brochure "VESTAKEEP® PEEK Processing Guidelines".

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

Mechanical properties ISO	dry	Unit	Test Standard
Tensile Modulus	**3600**	MPa	ISO 527
Tensile Strength	**95**	MPa	ISO 527
Yield stress	**95**	MPa	ISO 527
Yield strain	**5**	%	ISO 527
Stress at break	**75**	MPa	ISO 527
Nominal strain at break, εtB	**25**	%	ISO 527
Charpy impact strength, +23°C	**N**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**N**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**7**	kJ/m²	ISO 179/1eA
Type of failure	**C**	-	-

Charpy notched impact strength, -30°C	**6**	kJ/m²	ISO 179/1eA
Type of failure	**C**	-	-

Thermal properties	**dry**	**Unit**	**Test Standard**
Melting temperature	**340**	°C	ISO 11357-1/-3
Glass transition temperature	**152**	°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	**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**
Water absorption	**0.5**	%	Sim. to ISO 62
Density	**1300**	kg/m³	ISO 1183

Burning Behav.	**dry**	**Unit**	**Test Standard**
YellowCard available	yes	-	-
Burning behav. at thickness h	**V-0**	class	IEC 60695-11-10
Thickness tested	**3.2**	mm	-
Yellow Card available	yes	-	-
Oxygen index	**38**	%	ISO 4589-1/-2
Glow Wire Flammability Index (GWFI)	**960**	°C	IEC 60695-2-12
GWFI - thickness tested (1)	**2**	mm	-
Glow Wire Ignition Temperature (GWIT)	**800**	°C	IEC 60695-2-13
GWIT - thickness tested (1)	**2**	mm	-

Electrical properties	**dry**	**Unit**	**Test Standard**
Relative permittivity, 100Hz	**2.8**	-	IEC 62631-2-1

Relative permittivity, 1MHz	**2.8**	-	IEC 62631-2-1
Dissipation factor, 100Hz	**30**	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	**50**	E-4	IEC 62631-2-1
Volume resistivity, ρV	**>1E13**	Ohm*m	IEC 62631-3-1
Surface resistivity, σE	**1E15**	Ohm	IEC 62631-3-2
Electric strength, AC, S20/S20	**19**	kV/mm	IEC 60243-1
Electric strength, AC, S20/P50	**16**	kV/mm	Sim. to IEC 60243-1
CTI, test solution A, 50 drops value	**200**	-	IEC 60112

Rheological properties	**dry**	**Unit**	**Test Standard**
Melt volume-flow rate, MVR	**20**	cm^3/10min	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
Mold temperature	**180**	°C	-
Melt temperature	**370**	°C	-

Characteristics

Key Feature, Industrial Sector
Aircraft and Aerospace, Electrical and Electronical, Instustry and Building Construction

Key Feature, Processing
Injection Molding, Extrusion

Key Feature, Resistance to
Heat (Thermal Stability)

Applications
Monofilament, Multifilament, Tube and hose

Processing
Film Extrusion, Profile Extrusion

Features
General Chemical Resistance

Color
Natural Color

Delivery form
Pellets, Granules

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)

Injection molding

PREPROCESSING INFORMATION
Maximum Water Content: 0.25 %
When the water content is exceeded, the resin must be dried.The drying time is dependent on the drying temperature. In practice a drying time of 2 - 3 hours at a temperature of 150 - 160 °C (depending on the water content of the resin) has been found to be satisfactory. With the exeption of fresh air dryers, all conventional dryers can be used.

PROCESSING INFORMATION

Melt Temperature:	360 - 380	°C
Mold Temperature:	160 - 200	°C

POSTPROCESSING INFORMATION
Tempering: Temperature: 200 °C
Tempering Time: 2 h

The level of internal strain in injection molded products can be reduced through tempering.

Film extrusion

PREPROCESSING INFORMATION
Maximum Water Content: 0.25 %
When the water content is exceeded, the resin must be dried.The drying time is dependent on the drying temperature. In practice a drying time of 2 - 3 hours at a temperature of 150 - 160 °C (depending on the water content of the resin) has been found to be satisfactory. With the exeption of fresh air dryers, all conventional dryers can be used.

PROCESSING INFORMATION
We recommend a linear tempearture profile for extrusion

Hopper:	100 - 120	°C
Temperature zone 1 - T-nozzle:	350 - 380	°C

Other extrusion

PREPROCESSING INFORMATION
Maximum Water Content: 0.25 %
When the water content is exceeded, the resin must be dried.The drying time is dependent on the drying temperature. In practice a drying time of 2 - 3 hours at a temperature of 150 - 160 °C (depending on the water content of the resin) has been found to be satisfactory. With the exeption of fresh air dryers, all conventional dryers can be used.

PROCESSING INFORMATION
We recommend a linear tempearture profile for extrusion

Hopper:	100 - 120	°C
Temperature zone 1 - T-nozzle:	350 - 380	°C

Profile extrusion

PREPROCESSING INFORMATION
Maximum Water Content: 0.25 %
When the water content is exceeded, the resin must be dried.The drying time is dependent on the drying temperature. In practice a drying time of 2 - 3 hours at a temperature of 150 - 160 °C (depending on the water content of the resin) has been found to be satisfactory. With the exeption of fresh air dryers, all conventional dryers can be used.

PROCESSING INFORMATION

Melt Temperature:	360 - 380	°C
Mold Temperature:	160 - 200	°C

POSTPROCESSING INFORMATION
Tempering: Temperature: 200 °C
Tempering Time: 2 h

The level of internal strain in injection molded products can be reduced through tempering.

This information and all technical and other advice are based on Evonik's present knowledge and experience. However, Evonik assumes no liability for such information or advice, including the extent to which such information or advice may relate to third party intellectual property rights. Evonik reserves the right to make any changes to information or advice at any time, without prior or subsequent notice. Evonik disclaims all representations and warranties, whether express or implied, and shall have no liability for, merchantability of the product or its fitness for a particular purpose (even if Evonik is aware of such purpose), or otherwise. EVONIK SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. It is the customer's sole responsibility to arrange for inspection and testing of all products by qualified experts. Reference to trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used.

® is a registered trademark of Evonik Industries AG or one of its subsidiaries

Evonik Operations GmbH
Smart Materials
High Performance Polymers
45772 Marl / Germany
Tel: +49 2365 49-9878
evonik-hp@evonik.com

www.plastics-database.com