

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.

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.

For information about processing VESTAKEEP® 3300 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

Aircraft and Aerospace, Industry and Engineering

Resistance to

Heat (thermal stability)

Processing

Injection molding, Extrusion

Conformity

Food contact

Delivery form

Pellets, Granules

Additives

Unfilled

Mechanical properties ISO

Tensile modulus

Value

3600

Unit

MPa

Test Standard

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, tB	25	%	ISO 527
Charpy impact strength, +23°C	N	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	7	kJ/m ²	ISO 179/1eA
Type of failure	C	-	-
Charpy notched impact strength, -30°C	6	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	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
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
UL Yellow Card available	<u>yes</u>	-	-
Burnin behav. at thickness h	V-0	class	IEC 60695-11-10

Thickness tested	3.2	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
GWFI - thickness tested	2	mm	-
Glow Wire Ignition Temperature (GWIT)	800	°C	IEC 60695-2-13
GWIT - thickness tested	2	mm	-
Hot Wire Ignition (HWI)	1	PL-Klasse	IEC 60695-2-20
HWI - thickness tested	3.2	mm	-

Electrical properties	Value	Unit	Test Standard
Volume resistivity, V	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity, E	1E15	Ohm	IEC 62631-3-2
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
Dielectric strength, AC, S20/S20, t. 1 mm	33.9	kV/mm	IEC 60243-1
Dielectric strength, AC, S20/P25	24.5^[a]	kV/mm	IEC 60243-1
Dielectric strength, AC, P25/P25	30.7^[a]	kV/mm	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
CTI, Performance Level Categories, PLC	3	class	ASTM D 3638
Dielectric strength, Short Time	30.5^[a]	kV/mm	ASTM D 149
Thickness tested	0.99	mm	-

a: 1 mm thickness

Optical properties	Value	Unit	Test Standard
Color L	62	-	CIE
Color a	2.9	-	CIE
Color b	8.3	-	CIE

Rheological properties	Value	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	-

Rheological calculation properties	Value	Unit	Test Standard
Min. mold temperature	160	°C	-
Max. mold temperature	200	°C	-
Min. melt temperature	360	°C	-
Max. melt temperature	380	°C	-

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
Injection Molding, pressure at hold	120	MPa	ISO 294

Characteristics

Applications

Electrical and Electronical, Monofilament, Multifilament, Tube and hose

Processing

Film extrusion, Profile extrusion

Color

Natural color

Additives

External lubrication

Chemical Resistance

General chemical resistance

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)

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