

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".

**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

dry

**522000**

Unit

psi

Test Standard

ISO 527

Tensile strength	<b>13800</b>	psi	ISO 527
Yield stress	<b>13800</b>	psi	ISO 527
Yield strain	<b>5</b>	%	ISO 527
Stress at break	<b>10900</b>	psi	ISO 527
Nominal strain at break, tB	<b>25</b>	%	ISO 527
Charpy impact strength, +23°C	<b>N</b>	ftlb/in <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	<b>N</b>	ftlb/in <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	<b>3.33</b>	ftlb/in <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-
Charpy notched impact strength, -30°C	<b>2.85</b>	ftlb/in <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-

<b>Thermal properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Melting temperature	<b>644</b>	°F	ISO 11357-1/-3
Glass transition temperature, DSC	<b>306</b>	°F	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	<b>311</b>	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	<b>401</b>	°F	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	<b>635</b>	°F	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	<b>581</b>	°F	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	<b>3.33E-5</b>	in/in/°F	ISO 11359-1/-2
Melting Temperature	<b>644</b>	°F	ASTM D 3418

<b>Physical properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Density	<b>1.3</b>	g/cm <sup>3</sup>	ISO 1183
Water absorption	<b>0.5</b>	%	Sim. to ISO 62
Density	<b>1.3</b>	g/cm <sup>3</sup>	ASTM D 792

Burning Behav.	dry	Unit	Test Standard
UL Yellow Card available	<a href="#">yes</a>	-	-
Burnin behav. at thickness h	<b>V-0</b>	class	IEC 60695-11-10
Thickness tested	<b>0.1260</b>	in	-
Oxygen index	<b>38</b>	%	ISO 4589-1/-2
Limiting Oxygen Index	<b>38</b>	%	ASTM D 2863
Glow Wire Flammability Index (GWFI)	<b>1760</b>	°F	IEC 60695-2-12
GWFI - thickness tested	<b>0.0787</b>	in	-
Glow Wire Ignition Temperature (GWIT)	<b>1470</b>	°F	IEC 60695-2-13
GWIT - thickness tested	<b>0.0787</b>	in	-
Hot Wire Ignition (HWI)	<b>1</b>	PLC	IEC 60695-2-20
HWI - thickness tested	<b>0.1260</b>	in	-

Electrical properties	dry	Unit	Test Standard
Volume resistivity, V	<b>&gt;1E13</b>	Ohm*m	IEC 62631-3-1
Surface resistivity, E	<b>1E15</b>	Ohm	IEC 62631-3-2
Relative permittivity, 100Hz	<b>2.8</b>	-	IEC 62631-2-1
Relative permittivity, 1MHz	<b>2.8</b>	-	IEC 62631-2-1
Dissipation factor, 100Hz	<b>30</b>	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	<b>50</b>	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/S20, t. 1 mm	<b>861</b>	kV/in	IEC 60243-1
Dielectric strength, AC, S20/P25	<b>622<sup>[f]</sup></b>	V/mil	IEC 60243-1
Dielectric strength, AC, P25/P25	<b>780<sup>[f]</sup></b>	V/mil	IEC 60243-1
CTI, test solution A, 50 drops value	<b>200</b>	-	IEC 60112
Assessment of the insulation group	<b>III a</b>	-	DIN EN 60664-1
CTI, Performance Level Categories, PLC	<b>3</b>	class	ASTM D 3638
Dielectric strength, Short Time	<b>775<sup>[f]</sup></b>	V/mil	ASTM D 149
Thickness tested	<b>0.0390</b>	in	-

f: 1 mm thickness

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

Rheological properties	dry	Unit	Test Standard
Melt volume-flow rate, MVR	20	cm <sup>3</sup> /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	356	°F	-
Melt temperature	698	°F	-

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	716	°F	ISO 294
Injection Molding, mold temperature	356	°F	ISO 294
Injection Molding, injection velocity	7.87	in/s	ISO 294
Injection Molding, pressure at hold	17400	psi	ISO 294

### Characteristics

#### Applications

Electrical and Electronical, Monofilament, Multifilament, Tube and hose

#### Processing

Film extrusion, Profile extrusion

#### Color

Natural color

#### 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)

**Rheological calculation properties**

	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Min. mold temperature	<b>320</b>	°F	-
Max. mold temperature	<b>392</b>	°F	-
Min. melt temperature	<b>680</b>	°F	-
Max. melt temperature	<b>716</b>	°F	-