Product Information

VESTAKEEP® 4500 G

HIGH VISCOSITY, UNREINFORCED POLYETHER ETHER KETONE



VESTAKEEP® 4500 G is a high viscosity, fast cristallization, unreinforced polyether ether ketone for injection molding and extrusion.

The semi-crystalline polymer features superior, thermal and chemical resistance. Parts made from VESTAKEEP® 4500 G are of low flammability.

VESTAKEEP® 4500 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® 4500 G is supplied as granules in 25kg 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.

For information about processing VESTAKEEP® 4500 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	Value	Unit	Test Standard
Tensile modulus	**3800**	MPa	ISO 527
Tensile strength	**96**	MPa	ISO 527
Yield stress	**96**	MPa	ISO 527
Yield strain	**5**	%	ISO 527
Strain at break, εB	**30**	%	ISO 527
Nominal strain at break, εtB	**30**	%	ISO 527
Poisson's ratio, 23°C	**0.41**	-	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**	-	-

Thermal properties	**Value**	**Unit**	**Test Standard**
Melting temperature	**340**	°C	ISO 11357-1/-3
Glass transition temperature, 2 nd heating, midpoint	**153**	°C	ISO 11357
Temp. of deflection under load A, 1.80 MPa	**156**	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**232**	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**69**	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**64**	E-6/K	ISO 11359-1/-2

Physical properties	**Value**	**Unit**	**Test Standard**
Density	**1300**	kg/m³	ISO 1183
Shore D hardness	**86**	-	ISO 7619-1

Burning Behav.	**Value**	**Unit**	**Test Standard**
Burnin behav. at thickness h	**V-0**	class	IEC 60695-11-10
Thickness tested	**3.2**	mm	-

Electrical properties	**Value**	**Unit**	**Test Standard**
Volume resistivity, ρV	**>1E13**	Ohm*m	IEC 62631-3-1

Rheological properties	**Value**	**Unit**	**Test Standard**
Melt volume-flow rate, MVR	**9**	cm³/10min	ISO 1133
Temperature	**380**	°C	-
Load	**5**	kg	-
Molding shrinkage, parallel	**0.9**	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.2**	%	ISO 294-4, 2577
Mold temperature	**180**	°C	-

Melt temperature	**380**	°C	-
Melt viscosity, at 100 1/s	**1120**	Pa s	-
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

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	**<150**	°C	-
Pre-drying - Time	**4 - 6**	h	-
Processing humidity	**⩽0.02**	%	-
Melt temperature	**380**	°C	-
Mold temperature	**180**	°C	-
Feed temperature	**60**	°C	-

Processing Recommendation Extrusion	Value	Unit	Test Standard
Type of extrusion			
Type of extrusion	**profile**	-	-
Pretreatment			
Pre-drying - Temperature	**170 - 180**	°C	-
Pre-drying - Time	**8 - 12**	h	-
Processing humidity	**⩽0.02**	%	-
Plastification			
Feed temperature	**60**	°C	-
Heating zone 1	**350 - 360**	°C	-
Heating zone 2	**350 - 360**	°C	-
Heating zone 3	**360 - 370**	°C	-
Heating zone 4	**360 - 370**	°C	-

Heating zone 5	**370 - 380**	°C	-
Melt temperature	**380 - 390**	°C	-

Characteristics

Key Features, Industrial Sector
Automotive and Mobility, Industry and Engineering, Energy, Oil and Gas

Key Features, Processing
Injection molding, Extrusion

Key Features, Delivery form
Pellets, Granules

Key Features, Optics
Opaque

Key Features, Resistance to
Heat (thermal stability), Fire / burn

Key Features, Electrical
Insulating

Key Features, Conformity
Food contact

Key Features, Additives
Unfilled

Applications
General purpose

Processing
Profile extrusion, Sheet extrusion

Special Characteristics
Semi-crystalline, High viscosity

Color
Natural color

Chemical Resistance
General chemical resistance

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