Product Information

VESTAKEEP® 4000 P

UNREINFORCED, HIGH-VISCOSITY POLYETHER ETHER KETONE POWDER

VESTAKEEP® 4000 P is an unreinforced, high-viscosity polyether ether ketone powder. The product is suitable for the manufacture of compounds or it can be used as scatter-powder for the manufacture of composites.

The semi-crystalline polymer features superior thermal and chemical resistance. VESTAKEEP® 4000 P is of low flammability.

VESTAKEEP® 4000 P is supplied as powder in 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 the values.

For information about processing of VESTAKEEP® 4000 P, please follow the general recommendations in our brochure "VESTAKEEP® High Performance in Powder Form Polyether Ether Ketone Powders".

The values presented are typical or average values, they do not constitute a specification.

Key Features

Industrial Sector
Automotive and Mobility, Aircraft and Aerospace, Industry and Engineering

Processing
Press and sintering, Coating

Delivery form
Powder

Resistance to
Heat (thermal stability), Fire / burn

Additives
Unfilled

Mechanical properties ISO	dry	Unit	Test Standard
Tensile modulus	**3600**	MPa	ISO 527
Tensile strength	**93**	MPa	ISO 527
Yield stress	**93**	MPa	ISO 527

Yield strain	**5**	%	ISO 527
Stress at break	**78**	MPa	ISO 527
Nominal strain at break, tB	**30**	%	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**	-	-
Flexural modulus, 23°C	**4100**	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	**130**	MPa	ISO 178
Flexural stress at break, 23°C	**125**	MPa	ISO 178
Flexural strain at break, 23°C	**9**	%	ISO 178

Thermal properties	**dry**	**Unit**	**Test Standard**
Melting temperature	**337**	°C	ISO 11357-1/-3
Glass transition temperature, DSC	**152**	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**150**	°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
Melting Temperature	**337**	°C	ASTM D 3418

Physical properties	**dry**	**Unit**	**Test Standard**
Density	**1300**	kg/m³	ISO 1183
Density	**1300**	kg/m³	ASTM D 792

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

Optical properties	dry	Unit	Test Standard
Color L	**62**	-	CIE
Color a	**2.53**	-	CIE
Color b	**7.2**	-	CIE

Rheological properties	dry	Unit	Test Standard
Melt volume-flow rate, MVR	**11**	cm^3/10min	ISO 1133
Temperature	**380**	°C	-
Load	**5**	kg	-

Powder properties	dry	Unit	Test Standard
Bulk density, powder	**220**	g/l	EN ISO 60
Particle size, D(50)	**550**	µm	ISO 13320, DIN ISO 8130-13

Test specimen production	dry	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

Characteristics

Applications
Electrical and Electronical

Color
Natural color

Processing
Scatter coating

Chemical Resistance
General chemical resistance

Special Characteristics
Semi-crystalline, High viscosity