Product Information

VESTAKEEP® M4P

Medical grade; high-viscosity, unreinforced polyether ether ketone powder

VESTAKEEP M4P 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 M4P is self-extinguishing.

VESTAKEEP M4P is supplied as powder in boxes with moisture-proof polyethylene liners.

For information about processing of VESTAKEEP M4P, please follow the general recommendations in our brochure "VESTAKEEP Polyether Ether Ketone Powder".

VESTAKEEP M4P fulfils the following requirements to meet the demands for medical applications:
Biocompatibility testing:

- United States Pharmacopoeia Testing : <87> "Biological Reactivity Testing In Vitro"
- Cytotoxicity test: L929 MEM elution, according to ISO 10993-5 (37°C/24h)

Granules made of VESTAKEEP M4P fulfil the following requirements:

United States Pharmacopoeia Testing: <88> "Biological Reactivity Testing In Vivo" Class VI:

- Acute Systemic Toxicity Test: 4 different extraction media (70°C/24h)
- Irritation Test – Intracutaneous Injection test: 4 different extraction media (70°C/24h)
- Implantation Test: In Vivo-Implantation test: intramuscular, 7 days

For further information, please contact our experts in the department Market Development of the High Performance Polymers Business Line.

Powder Information

Property		Test method international	national	Unit	VESTAKEEP M4P
App. bulk density		ISO 60	DIN 53 468	g/dm³	220
Average particle size	d50		Malvern Mastersizer	µm	approx. 550

Application technology properties

Property		Test method international	national	Unit	VESTAKEEP M4P
Density	23 °C	ISO 1183	DIN EN ISO 1183	g/cm³	1.30
Tensile test		ISO 527-1	DIN EN ISO 527-1		
Stress at yield		ISO 527-2	DIN EN ISO 527-2	MPa	94
Strain at yield				%	5
Strain at break				%	30
Tensile modulus		ISO 527-1/2	DIN EN ISO 527-1/2	MPa	3400
CHARPY impact strength		ISO 179/1eU	DIN EN ISO 179/1eU		
	23 °C			kJ/m²	N [1]
	-30 °C			kJ/m²	N [1]
CHARPY notched impact strength		ISO 179/1eA	DIN EN ISO 179/1eA		
	23 °C			kJ/m²	8 C [1]
	-30 °C			kJ/m²	6 C [1]
Temperature of deflection		ISO 75-1	DIN EN ISO 75-1		
under load		ISO 75-2	DIN EN ISO 75-2		
Method A	1.8 MPa			°C	150
Method B	0.45 MPa			°C	205
Vicat softening temperature		ISO 306	DIN EN ISO 306		
Method A	10 N			°C	335
Method B	50 N			°C	305
Melting range		ISO 11357			
DSC	2nd heating			°C	approx. 340
Melt volume-flow rate (MVR)		ISO 1133	DIN EN ISO 1133		
380 °C /	5 kg			cm³/10 min	12
380 °C /	10 kg			cm³/10 min	35
Flammability acc. UL94		IEC60695	UL94		
	0.8 mm				V-1
	1.6 mm				V-0

Pigmentation may affect values.

[1] C = Complete break, incl. hinge break H
N = No break

® = registered trademark

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