

Product Information

VESTAKEEP® I2G

Medical grade for long-term body contact¹⁾, medium-viscosity, unreinforced polyether ether ketone

VESTAKEEP I2G is a medium-viscosity, unreinforced polyether ether ketone for injection molding. The semi-crystalline polymer features superior thermal and chemical resistance. Parts made from VESTAKEEP I2G are self-extinguishing.

VESTAKEEP I2G can be processed by common machines for thermoplastics. We recommend a melt temperature between 680°F and 716°F during the injection molding process. The mold temperature should be within a range of 320°F to 392°F, preferably 356°F.

VESTAKEEP I2G is supplied as granules in 25 kg boxes with moisture-proof polyethylene liners.

For information about processing of VESTAKEEP I2G, please follow the general recommendations in our brochure "VESTAKEEP Polyether Ether Ketone Compounds".

VESTAKEEP I2G fulfils the following requirements to meet the demands for medical applications:

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

- Acute Systemic Toxicity test: 4 different extraction media (158°F/24h)
- Irritation Test – Intracutaneous Injection test: 4 different extraction media (158°F/24h)

- Implantation Test: In Vivo-Implantation test: intramuscular, 7 days

Biocompatibility testing:

- United States Pharmacopoeia Testing : <87> "Biological Reactivity Testing In Vitro"
- Cytotoxicity Test: L929 MEM elution, according to ISO 10993-5 (99°F/24h)
- ISO 10993-4: Haemocompatibility
- ISO 10993-18: Investigation of extractable organic substances

¹⁾ In addition to the body contact period the suitability of the material depends on further criteria, for example the nature of the contact, the processing, or the surface. In any case the suitability has to be verified for the end product.

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

Property	Test method					
		Unit SI	VESTAKEEP I2G	Unit US	VESTAKEEP I2G	
Density	73°F	ISO 1183	g/cm ³	1.30	g/cm ³	1.30
Tensile test		ASTM D638				
Stress at yield			MPa	100	kpsi	14.5
Strain at yield			%	5	%	5
Strain at break			%	30	%	30
Tensile modulus		ASTM D638	MPa	3700	kpsi	540
Flexural test		ASTM D790				
Flexural strength			MPa	145	kpsi	21
Flexural modulus		ASTM D790	MPa	3500	kpsi	510
CHARPY impact strength		ISO 179/1eU				
	73°F		kJ/m ²	N ¹⁾	kJ/m ²	N ¹⁾
	-22°F		kJ/m ²	N ¹⁾	kJ/m ²	N ¹⁾
IZOD notched impact strength		ASTM D256 A				
	73°F		J/m	52	ft-lb/in	1.0
	-22°F		J/m	50	ft-lb/in	1.0
Vicat softening temperature		ISO 306				
Method A	10 N		°C	335	°F	635
Method B	50 N		°C	310	°F	590
Linear thermal expansion		ISO 11359				
longitudinal	73-131°F		10 ⁻⁴ K ⁻¹	0.6	ppm/°F	33
Relative permittivity		IEC 60250				
	50 Hz			2.8		2.8
	1 MHz			2.8		2.8
Electric strength	K20/P50	IEC 60243-1	kV/mm	16	V/mil	406
Volume resistivity		IEC 60093	Ohm · m	10 ¹⁵	Ohm · m	10 ¹⁵
Surface resistance		IEC 60093	Ohm	10 ¹⁴	Ohm	10 ¹⁴
Melting range		ISO 11357				
DSC	2 nd heating		°C	approx. 340	°F	approx. 644
Melt volume-flow rate (MVR)		ISO 1133				
	716°F/ 5kg		cm ³ /10 min	70	cm ³ /10 min	70
Flammability acc. UL94		IEC 60695				
	0.06 inch	UL94		V-0		V-0
Glow wire test		IEC 60695-2-				
GWIT	0.08 inch	12/13	°C	875	°F	1607
GWFI	0.08 inch		°C	960	°F	1760
Mold shrinkage		0.08 inch				
in flow direction		sheets, mold-	%	0.7	%	0.7
in transverse direction		temp. 356°F	%	1.2	%	1.2
		ISO 294-4				

¹⁾ N = No break

® = registered trademark

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