

VESTAKEEP® MC 4420 G

Polyetheretherketone
Evonik Industries AG

Message:

White polyether ether ketone for medical applications.
VESTAKEEP MC 4420 G is a white polyetherether ketone (PEEK) grade that is designed for medical applications with limited time body contact (up to 180 days).
The compound composition is optimised for high biocompatibility and superior mechanical, thermal and chemical resistance.
VESTAKEEP MC 4420 G can be processed by common injection molding and extrusion processes.
We recommend a melt temperature between 380°C and 400°C during the injection molding process. The mold temperature should be within a range of 160°C to 200°C, preferably 180°C.
List of performed biocompatibility tests:
Cytotoxicity Growth Inhibition test according to ISO 10993-5
Sensitisation according to ISO 10993-10
Classification of plastic- USP- Class VI
The results of these tests showed no signs of cytotoxicity, sensitisation, irritation, or compound related tissue reactions.
VESTAKEEP MC 4420 G meets the requirements of USP Plastic Class VI.

General Information			
Features	Good Chemical Resistance		
	High Viscosity		
	Self Extinguishing		
	Semi Crystalline		
Uses	Medical/Healthcare Applications		
Agency Ratings	ISO 10993 Part 10		
	ISO 10993 Part 5		
	USP Class VI		
Forms	Granules		
	Powder		
Processing Method	Extrusion		
	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Density	1.49	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (380°C/5.0 kg)	8.00	cm ³ /10min	ISO 1133
Water Absorption (Saturation, 23°C)	0.40	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	4100	MPa	ISO 527-2
Tensile Stress (Yield)	95.0	MPa	ISO 527-2
Tensile Strain			ISO 527-2

Yield	5.0	%	
Break	20	%	
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C, Complete Break	7.0	kJ/m ²	
23°C, Complete Break	7.0	kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C, Partial Break	No Break		
23°C	No Break		
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	210	°C	ISO 75-2/B
1.8 MPa, Unannealed	155	°C	ISO 75-2/A
Vicat Softening Temperature			
--	335	°C	ISO 306/A
--	305	°C	ISO 306/B
Melting Temperature ¹	340	°C	ISO 11357-3
CLTE - Flow (23 to 55°C)	4.5E-5	cm/cm/°C	ISO 11359-2
Flammability	Nominal Value		Test Method
Flame Rating (1.60 mm)	V-0		UL 94
NOTE			

1. 2nd heating

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