

Product Texts

Implantable grade polyether ether ketone resin for permanent implants

VESTAKEEP® i5 G is a natural colored, very high viscosity polyether ether ketone (PEEK) that is especially designed for long term implantable medical devices.

Proven Biocompatibility of VESTAKEEP® i-Grades

The extra high purity and extended quality measures make VESTAKEEP® i-Grade materials an excellent choice for permanent implants.

For VESTAKEEP® i5 G, biocompatibility has been tested following ISO 10993-1 recommendations for permanent tissue/bone contact and USP Class VI.

VESTAKEEP® i5 G complies ASTM F2026 “Standard Specification for Polyetheretherketone (PEEK) Polymers for Surgical Implant Applications”.

A summary of biocompatibility test results is available upon request.

Biocompatibility tests available for i5 G

Delivery of VESTAKEEP® i-Grades

VESTAKEEP® i5 G is supplied as cylindrical pellets in 10 kg boxes with moisture-proof polyethylene liners.

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

FOR FURTHER INFORMATION PLEASE CONTACT US AT EVONIK-HP@EVONIK.COM
OR VISIT OUR PRODUCT AT WWW.EVONIK.COM/MEDICAL-TECHNOLOGY

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
^[C] Melt volume-flow rate, MVR	7	cm ³ /10min	ISO 1133
Temperature	380	°C	-
Load	5	kg	-
^[C] Molding shrinkage, parallel	0.9	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	1.1	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	3500	MPa	ISO 527
^[C] Yield stress	95	MPa	ISO 527
^[C] Yield strain	5	%	ISO 527
^[C] Nominal strain at break	34	%	ISO 527
^[C] Charpy impact strength, +23°C	N	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	N	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	9.5	kJ/m ²	ISO 179/1eA
^[C] Type of failure	C	-	-
^[C] Charpy notched impact strength, -30°C	8	kJ/m ²	ISO 179/1eA
^[C] Type of failure	C	-	-

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
ISO Data			
^[C] Melting temperature, 10°C/min	338	°C	ISO 11357-1/-3
^[C] Glass transition temperature, 10°C/min	153	°C	ISO 11357-1/-2
^[C] Temp. of deflection under load, 1.80 MPa	150	°C	ISO 75-1/-2

VESTAKEEP® i5 G

PEEK

Evonik Operations GmbH

[C] Temp. of deflection under load, 0.45 MPa	205	°C	ISO 75-1/-2
[C] Vicat softening temperature, B	305	°C	ISO 306
[C] Coeff. of linear therm. expansion, parallel	60	E-6/K	ISO 11359-1/-2
[C] Oxygen index	36	%	ISO 4589-1/-2

[C]: CAMPUS

Other properties	Value	Unit	Test Standard
[C] Water absorption	0.4	%	Sim. to ISO 62
[C] Humidity absorption	0.12	%	Sim. to ISO 62
[C] Density	1300	kg/m ³	ISO 1183

[C]: CAMPUS

Test specimen production	Value	Unit	Test Standard
ISO Data			
[C] 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

[C]: CAMPUS

Characteristics**Processing**

Other Extrusion

Delivery form

Pellets, Natural Color

Certifications

Medical Grade, Biocompatibility ISO 10993, US Pharmacopeia
Class VI Approved

Applications

Medical

Regional Availability

North America, Europe, Asia Pacific, South and Central America,
Near East/Africa