

**Product Texts**

**Implantable grade polyether ether ketone resin for permanent implants**

**VESTAKEEP® i2 G** is a natural colored, standard viscosity polyether ether ketone (PEEK) that is especially designed for long term implantable medical devices. This grade is often used for injection molding processing technologies due to its good flowability.

**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® i2 G, biocompatibility has been tested following ISO 10993-1 recommendations for permanent tissue/bone contact and USP Class VI.

VESTAKEEP® i2 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 i2 G**

**Processing of VESTAKEEP® i-Grades**

VESTAKEEP® i2 G can be processed by common melt processing techniques like injection molding and extrusion.

We recommend a melt temperature between 360°C and 380°C during the injection molding process. The mold temperature should be within a range of 160°C to 200°C, preferably 180°C.

Our technical experts would appreciate to give you support regarding the special requirements for the processing of VESTAKEEP® i2 G.

**Delivery of VESTAKEEP® i-Grades**

VESTAKEEP® i2 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](mailto:EVONIK-HP@EVONIK.COM) OR VISIT OUR PRODUCT AT [WWW.EVONIK.COM/MEDICAL-TECHNOLOGY](http://WWW.EVONIK.COM/MEDICAL-TECHNOLOGY)

Processing/Physical Characteristics	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melt volume-flow rate, MVR	<b>68</b>	cm <sup>3</sup> /10min	ISO 1133
Temperature	<b>380</b>	°C	-
Load	<b>5</b>	kg	-
<sup>[C]</sup> Molding shrinkage, parallel	<b>1.1</b>	%	ISO 294-4, 2577
<sup>[C]</sup> Molding shrinkage, normal	<b>1.1</b>	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	<b>3700</b>	MPa	ISO 527
<sup>[C]</sup> Yield stress	<b>98</b>	MPa	ISO 527
<sup>[C]</sup> Yield strain	<b>5</b>	%	ISO 527
<sup>[C]</sup> Nominal strain at break	<b>20</b>	%	ISO 527
<sup>[C]</sup> Charpy impact strength, +23°C	<b>N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy impact strength, -30°C	<b>N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy notched impact strength, +23°C	<b>6</b>	kJ/m <sup>2</sup>	ISO 179/1eA
<sup>[C]</sup> Type of failure	<b>C</b>	-	-
<sup>[C]</sup> Charpy notched impact strength, -30°C	<b>6</b>	kJ/m <sup>2</sup>	ISO 179/1eA
<sup>[C]</sup> Type of failure	<b>C</b>	-	-

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melting temperature, 10°C/min	<b>342</b>	°C	ISO 11357-1/-3
<sup>[C]</sup> Glass transition temperature, 10°C/min	<b>150</b>	°C	ISO 11357-1/-2
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	<b>150</b>	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 0.45 MPa	<b>205</b>	°C	ISO 75-1/-2
<sup>[C]</sup> Vicat softening temperature, B	<b>310</b>	°C	ISO 306
<sup>[C]</sup> Coeff. of linear therm. expansion, parallel	<b>60</b>	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Oxygen index	<b>38</b>	%	ISO 4589-1/-2

[C]: CAMPUS

Electrical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Relative permittivity, 100Hz	<b>2.8</b>	-	IEC 62631-2-1
<sup>[C]</sup> Relative permittivity, 1MHz	<b>2.8</b>	-	IEC 62631-2-1
<sup>[C]</sup> Dissipation factor, 1MHz	<b>50</b>	E-4	IEC 62631-2-1
<sup>[C]</sup> Volume resistivity	<b>&gt;1E13</b>	Ohm*m	IEC 62631-3-1
<sup>[C]</sup> Comparative tracking index	<b>200</b>	-	IEC 60112

[C]: CAMPUS

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

[C]: CAMPUS

Test specimen production	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Injection Molding, melt temperature	<b>380</b>	°C	ISO 294
Injection Molding, mold temperature	<b>180</b>	°C	ISO 294
Injection Molding, injection velocity	<b>200</b>	mm/s	ISO 294

[C]: CAMPUS

**Characteristics**

**Processing**

Injection Molding, Other Extrusion

**Applications**

Medical

**Delivery form**

Pellets, Natural Color

**Regional Availability**

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

**Certifications**

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