

**Product Texts**

**Low viscosity polyamide 12 for medical application**

VESTAMID® Care ML16 is resistant to body fluids and toxicologically safe.

Typical application areas for filled VESTAMID Care ML grades include catheters, housing parts, monitoring and imaging devices and durable medical equipment.

**The advantages at a glance:**

- High flexibility & elasticity
- Good rebound properties
- High impact resistance
- Excellent dimensional stability
- High chemical resistance
- Easy processability & colorability
- Plasticizer-free
- Gamma and EtO sterilization resistant
- Tough and resilient

**Biocompatibility of VESTAMID® Care ML**

Biocompatibility was tested following ISO10993-1 recommendations for a surface medical device with up to 30 days body contact.

The material fulfills the requirements of USP<88> class VI.

Tests were performed by independent, certified laboratories.

**Biocompatibility tests for VESTAMID® Care:**

Standard	Description
ASTM F756-08	Hemocompatibility
ISO 10993-5	Cytotoxicity
ISO 10993-10	Sensitization: Maximization test according to Magnusson and Kligman
ISO 10993-10	Irritation: Intracutaneous Reactivity
ISO 10993-11	Acute Systemic Toxicity
USP Class VI	Acute Systemic Toxicity Intracutaneous Reactivity Muscle Implantation

**Processing of VESTAMID® Care**

For information about processing of VESTAMID®, please follow the general commendations about "[Processing of VESTAMID® compounds](#)".

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	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melt volume-flow rate, MVR	46 / *	cm³/10min	ISO 1133
Temperature	210 / *	°C	-
Load	2.16 / *	kg	-
<sup>[C]</sup> Molding shrinkage, parallel	0.9 / *	%	ISO 294-4, 2577
<sup>[C]</sup> Molding shrinkage, normal	1.1 / *	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	1400 / -	MPa	ISO 527

<sup>[C]</sup> Yield stress	<b>43 / -</b>	MPa	ISO 527
<sup>[C]</sup> Yield strain	<b>5 / -</b>	%	ISO 527
<sup>[C]</sup> Nominal strain at break	<b>&gt;50 / -</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>4 / -</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>5 / -</b>	kJ/m <sup>2</sup>	ISO 179/1eA
<sup>[C]</sup> Type of failure	<b>C / -</b>	-	-
<sup>[C]</sup> Shore D hardness	<b>75 / *</b>	-	ISO 7619-1

[C]: CAMPUS

Thermal properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melting temperature, 10°C/min	<b>178 / *</b>	°C	ISO 11357-1/-3
<sup>[C]</sup> Glass transition temperature, 10°C/min	<b>45 / *</b>	°C	ISO 11357-1/-2
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	<b>50 / *</b>	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 0.45 MPa	<b>110 / *</b>	°C	ISO 75-1/-2
<sup>[C]</sup> Vicat softening temperature, B	<b>140 / *</b>	°C	ISO 306
<sup>[C]</sup> Coeff. of linear therm. expansion, parallel	<b>150 / *</b>	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Burning Behav. at 1.5 mm nom. thickn.	<b>HB / *</b>	class	IEC 60695-11-10
Thickness tested	<b>1.6 / *</b>	mm	-

[C]: CAMPUS

Electrical properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Relative permittivity, 100Hz	<b>3.1 / -</b>	-	IEC 62631-2-1
<sup>[C]</sup> Relative permittivity, 1MHz	<b>2.9 / -</b>	-	IEC 62631-2-1
<sup>[C]</sup> Dissipation factor, 100Hz	<b>400 / -</b>	E-4	IEC 62631-2-1
<sup>[C]</sup> Dissipation factor, 1MHz	<b>300 / -</b>	E-4	IEC 62631-2-1
<sup>[C]</sup> Volume resistivity	<b>1E11 / -</b>	Ohm*m	IEC 62631-3-1

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
<sup>[C]</sup> Water absorption	<b>1.5 / *</b>	%	Sim. to ISO 62
<sup>[C]</sup> Humidity absorption	<b>0.7 / *</b>	%	Sim. to ISO 62
<sup>[C]</sup> Density	<b>1020 / -</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>200</b>	°C	ISO 294
Injection Molding, mold temperature	<b>60</b>	°C	ISO 294
Injection Molding, injection velocity	<b>200</b>	mm/s	ISO 294

[C]: CAMPUS

## Characteristics

### Processing

Injection Molding

### Delivery form

Pellets

### Special Characteristics

High impact or impact modified, Sterilizable, Ethylene Oxide (EtO) Sterilization, Gamma irradiation sterilization

### Chemical Resistance

General Chemical Resistance

### Certifications

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

**Features**

Tribologic Grade

**Applications**

Medical

**Regional Availability**

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