

Product Texts

High viscosity Polyamide 12 for medical application

VESTAMID® Care ML21 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
OR VISIT OUR PRODUCT AT WWW.EVONIK.COM/MEDICAL-TECHNOLOGY

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
ISO Data			
^[C] Melt volume-flow rate, MVR	6 / *	cm³/10min	ISO 1133
Temperature	230 / *	°C	-
Load	5 / *	kg	-
^[C] Molding shrinkage, parallel	0.7 / *	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	1.2 / *	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	1450 / 1100	MPa	ISO 527

^[C] Yield stress	44 / 38	MPa	ISO 527
^[C] Yield strain	5 / 10	%	ISO 527
^[C] Nominal strain at break	>50 / >50	%	ISO 527
^[C] Charpy impact strength, +23°C	N / N	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	N / N	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	32 / 17	kJ/m ²	ISO 179/1eA
^[C] Type of failure	C / C	-	-
^[C] Charpy notched impact strength, -30°C	9 / 9	kJ/m ²	ISO 179/1eA
^[C] Type of failure	C / C	-	-
^[C] Shore D hardness	75 / *	-	ISO 7619-1

[C]: CAMPUS

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

[C]: CAMPUS

Electrical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	3.7 / 5	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	3 / 3.3	-	IEC 62631-2-1
^[C] Dissipation factor, 100Hz	450 / 800	E-4	IEC 62631-2-1
^[C] Dissipation factor, 1MHz	280 / 500	E-4	IEC 62631-2-1
^[C] Volume resistivity	>1E13 / 3E12	Ohm*m	IEC 62631-3-1
^[C] Surface resistivity	* / >1E15	Ohm	IEC 62631-3-2
^[C] Electric strength	- / 28	kV/mm	IEC 60243-1
^[C] Comparative tracking index	600 / 600	-	IEC 60112

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
^[C] Water absorption	1.5 / *	%	Sim. to ISO 62
^[C] Humidity absorption	0.7 / *	%	Sim. to ISO 62
^[C] Density	1010 / 1010	kg/m ³	ISO 1183

[C]: CAMPUS

Test specimen production	Value	Unit	Test Standard
ISO Data			
^[C] Injection Molding, melt temperature	240	°C	ISO 294
Injection Molding, mold temperature	60	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

[C]: CAMPUS

Characteristics

Processing

Injection Molding

Chemical Resistance

General Chemical Resistance

Delivery form

Pellets

Special Characteristics

High impact or impact modified, Heat stabilized or stable to heat, Sterilizable, Ethylene Oxide (EtO) Sterilization, Gamma irradiation sterilization

Features

Tribologic Grade

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