

Technical Information

VESTAMID® Care ML



VESTAMID Care ML grades cover a range of polyamide 12 resins of different viscosity for processing via extrusion or injection molding. The VESTAMID Care ML product range consists of unstabilized base resins as well as stabilized or reinforced compounds.

Flexible and reliable

VESTAMID® Care ML resins are characterized by several outstanding properties, such as high impact & notched impact resistance, dimensional stability, good sliding properties, high abrasion resistance and resistance against chemicals.

Unfilled VESTAMID® Care ML grades are for example the materials of choice for catheters and tubings, where VESTAMID® Care ML materials meet even highest challenges in applications such as angioplasty balloon catheters.

Typical areas of application for reinforced VESTAMID® Care ML grades include housing-parts, monitoring and imaging devices and durable medical equipment. Due to their low water uptake, filled VESTAMID® Care ML grades even resist steam autoclaving for more than 500 cycles.

The advantages at a glance

- High impact resistance
- High dimensional stability
- High chemical resistance
- Low sliding friction
- High toughness
- High abrasion resistance
- Easy processability & colorability

Approvals

VESTAMID® Care ML grades were tested on biocompatibility for applications within the body of up to 30 days contact time and comply with USP <88> class VI and ISO 10993 standards.

VESTAMID® Care ML – base resins

Properties	Test method int.	Unit	VESTAMID® Care ML16	VESTAMID® Care ML17	VESTAMID® Care ML18	VESTAMID® Care ML19	VESTAMID® Care ML21
Density	23°C	ISO 1183	g/cm ³	1.02	1.02	1.02	1.02
Tensile test 23° 50 mm/min		ISO 527-1/-2	MPa	45	45	45	45
Stress at yield			%	5	5	5	5
Strain at yield			%	>50	>50	>50	>50
Nominal strain at break							
Tensile modulus		ISO 527-1/-2	MPa	1400	1400	1400	1400
CHARPY impact strength	23°C -30°C	ISO 179/1eU	kJ/m ² kJ/m ²	N N	N N	N N	N N
CHARPY notched impact strength	23°C -30°C	ISO 179/1eA	kJ/m ² kJ/m ²	5 C 5 C	6 C 6 C	6 C 6 C	7 C 7 C
Melting range DSC, 2 nd heating		ISO 11357	°C	178	178	178	178
Temperature of deflection under load		ISO 75-1/-2					
Method A	1.8 MPa		°C	50	50	50	50
Method B	0.45 MPa		°C	110	110	110	110
Vicat softening temperature		ISO 306					
Method A	10 N		°C	170	170	170	170
Method B	50 N		°C	140	140	140	140
Linear thermal expansion 23 – 55 °C		ISO 11359	10 ⁻⁴ K ⁻¹	1.5	1.5	1.5	1.5
Flammability acc. UL94	3.2 mm 1.6 mm	IEC 60695		HB HB	HB HB	HB HB	HB HB
Mold shrinkage in flow direction in transverse direction	determined on 2mm sheets with film gate at rim, mold temp. 80°C ISO 294-4	%	0.95 1.09	0.68 1.22	0.85 1.03	0.78 1.10	0.70 1.25
Water absorption 23°C, saturation 23°C, 50% relative humidity		ISO 62	% %	1.5 0.7	1.5 0.7	1.5 0.7	1.6 0.8
Viscosity number		ISO 307	ml/g	120	140	160	180
							230

N = No break, P = Partial break, C = Complete break, incl. hinge break, HB = Horizontal burning

VESTAMID® Care ML- compounds

Properties	Test method int.	Unit	VESTAMID® Care ML67	VESTAMID® Care ML94	VESTAMID® Care ML24	VESTAMID® Care ML-GB30
Density 23°C	ISO 1183	g/cm ³	1.01	1.01	1.01	1.25
Tensile test	ISO 527-1 ISO 527-2	MPa	46 6 >50	45 5 >50	47 5 >50	47 5 >50
Tensile modulus	ISO 527-1/-2	MPa	1400	1350	1400	2000
CHARPY impact strength	ISO 179/1eU	kJ/m ²	N N	N N	N N	160 C 160 C
CHARPY notched impact strength	ISO 179/1eA	kJ/m ²	4 C 5 C	6 C 6 C	16 C 9 C	6 C 6 C
Melting range DSC, 2 nd heating	ISO 11357	°C	178	178	178	178
Temperature of deflection under load	ISO 75-1/-2					
Method A 1.8 MPa		°C	50	50	50	55
Method B 0.45 MPa		°C	120	120	110	150
Vicat softening temperature	ISO 306					
Method A 10 N		°C	170	170	170	150
Method B 50 N		°C	140	140	140	155
Linear thermal expansion 23 -55 °C	ISO 11359	10 ⁻⁴ K ⁻¹	1.5	1.5	1.4	1.3
Flammability acc. UL94	IEC 60695					
3.2 mm			HB	HB	HB	HB
1.6 mm			HB	HB	HB	HB
Mold shrinkage in flow direction in transverse direction	determined on 2mm sheets with film gate at rim, mold temp. 80°C ISO 294-4	%	0.9 1.1	0.85 1.15	0.65 1.25	1.2 1.2
Water absorption 23°C,saturation 23°C/50% relative humidity	ISO 62	%	1.4 0.7	1.5 0.8	1.6 0.7	1.1 0.5

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