VESTAMID®

Technical Information

VESTAMID® *Care* ME

VESTAMID® *Care* ME grades represent a range of flexible polyether block amide (PEBA) resins of varying hardness for processing via extrusion or injection molding. VESTAMID® *Care* ME materials are available as standard and bonding-modified grades.

Flexible and reliable

VESTAMID® *Care* ME standard grades have a proven history in catheter applications. Due to their broad range of flexibility, VESTAMID® *Care* ME grades are used in different parts of catheter constructions – may it be the distal end, requiring a low modulus for non-traumatic insertion, or the proximal end, needing a high modulus for force and torque transmission.

Newly developed VESTAMID® *Care* ME-B bonding grades enable a further freedom of design without raising issues regarding biocompatibility: VESTAMID® *Care* ME-B grades were specially modified to adhere to Daikin's Neoflon™ EFEP RP-5000 fluoropolymer without the need for any adhesive upon processing via coextrusion. Thereby, multilayer tubings can be realized, which combine the individual properties of both EFEP and PEBA, and do not contain any compatibilizer or adhesive, that might migrate out of the device.

The advantages at a glance

- High flexibility & elasticity
- Good rebound properties
- High impact resistance
- High dimensional stability
- High chemical resistance
- High toughness
- Easy processability & colorability
- Free of volatile plasticizers

Approvals

All VESTAMID® *Care* ME and ME-B 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* ME – Base grades

Properties	Test method	Unit	VESTAMID® *Care* ME40	VESTAMID® *Care* ME47	VESTAMID® *Care* ME55	VESTAMID® *Care* ME62	VESTAMID® *Care* ME71
Density 23°C	ISO 1183	g/cm³	1.01	1.03	1.03	1.03	1.01
Tensile test 23°C 50 mm/min	ISO 527-1						
Stress at 50% strain	ISO 527-2	MPa	9.5	17	17	23	30
Tensile strength		MPa	17	38	38	42	56
Strain at break		%	>200	>200	>200	>200	>200
Tensile modulus	ISO 527-1 / -2	MPa	80	220	220	370	1100
Tensile creep modulus 1000 h	ISO 899-1	MPa	60	100	100	200	200
CHARPY impact strength	ISO 179/1eU	kJ/m²	N	N	N	N	N
23 °C		kJ/m²	N	N	N	N	N
-30 °C							
CHARPY notched impact strength	ISO 179/1eA	kJ/m²	N	N	N	120 P	120 P
23 °C		kJ/m²	N	22 C	22 C	8 C	8 C
-30°C							
Shore hardness D	ISO 868		40	47	55	62	71
Temperature of deflection under load	ISO 75-1						
Method A 1.8 MPa	ISO 75-2	°C		45	45	45	
Method 0.45 MPa		°C	55	90	90	100	
Vicat softening temperature	ISO 306						
Method A 10 N		°C	125	160	160	165	
Method B 50 N		°C	60	100	100	110	144
Linear thermal expansion 23 – 55 °C	ISO 11359						
longitudinal		10^{-4} K^{-1}	2.4	2.0	2.0	2.0	
transverse		10^{-4} K^{-1}	2.1	2.0	2.0	2.0	
Flammability acc. UL94 1.6 mm	IEC 60695		HB	HB	HB	HB	
Mold shrinkage	determined on						
in flow direction	3mm sheets	%	0.6 – 0.9	0.6 – 1.1	0.6 – 1.1	0.6 – 1.1	
in transverse direction	with film gate	%	0.7 – 1.3	0.9 – 1.5	0.9 – 1.5	0.9 – 1.4	
	at rim, mold temp. 80°C ISO 294-4						
Water absorption	ISO 62						
23 °C,saturation		%	1.0	1.1	1.1	1.1	
23 °C, 50% rel. humidity		%					0.6

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

VESTAMID® *Care* ME – Bonding Grades

Properties	Test method	Unit	VESTAMID® *Care* ME40-B	VESTAMID® *Care* ME55-B	VESTAMID® *Care* ME62-B	VESTAMID® *Care* ME71-B
Density 23°C	ISO 1183	g/cm³	1.00	1.01	1.02	1.01
Tensile test 23°C 50 mm/min	ISO 527-1					
Stress at 50% strain	ISO 527-2	MPa	12	20	25	30
Tensile strength		MPa	27	39	42	59
Strain at break		%	>200	>200	>200	>200
Tensile modulus	ISO 527 -1 / -2	MPa	180	330	500	1060
Tensile creep modulus 1000 h	ISO 899-1	MPa	60	100	200	200
CHARPY impact strength	ISO 179/1eU					
23 °C		kJ/m²	N	N	N	N
-30 °C		kJ/m²	N	N	N	N
CHARPY notched impact strength	ISO 179/1eA					
23°C		kJ/m²	100 P	57 P	100 P	6 C
-30°C		kJ/m²	34 C	80 C	8 C	5 C
Shore hardness D	ISO 868		46	56	64	71
Vicat softening temperature	ISO 306					
Method A 10 N		°C	122	159	169	173
Method B 50 N		°C			126	137
Water absorption	ISO 62					
23 °C,saturation		%	1.5	1.6		
23 °C, 50% rel. humidity		%	0.7	0.7		

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

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