

Product Information

TROGAMID® Care MX97

MICROCRYSTALLINE AND TRANSPARENT POLYAMIDES FOR FOR MEDICAL APPLICATION



TROGAMID® Care MX is the material of choice for all applications dealing with pharmaceutical formulations, lipids or aggressive disinfectants, since it exhibits an exceptional resistance towards chemicals and stress-cracking. Examples include fluid and drug delivery equipment such as stop-cocks, dialyzer parts, housings, covers or hearing aids.

Target areas of application for TROGAMID® Care MX compounds include fluid and drug delivery systems, surgical instruments, housings, monitoring and imaging devices and durable medical equipment.

All advantages at a glance:

- High transparency
- High chemical resistance
- Very good stress crack resistance
- UV resistance
- High dynamic load-bearing capacity
- High impact resistance
- Easy processability & colorability
- Free of BPA
- Gamma and EtO sterilizable

Biocompatibility of TROGAMID® Care

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 TROGAMID® Care:

Key Features

Industrial Sector

Medical Devices

Processing

Injection molding, Extrusion

Delivery form

Pellets, Granules

Optics

Transparent

Resistance to

UV / light / weathering

Conformity

Food contact, Biocompatibility, Medical application

Additives

Release agent, Unfilled

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	1400 / -	MPa	ISO 527
Tensile strength	60 / -	MPa	ISO 527
Yield stress	60 / -	MPa	ISO 527
Yield strain	8 / -	%	ISO 527
Stress at 50% strain	42 / -	MPa	ISO 527
Stress at break	65 / -	MPa	ISO 527
Nominal strain at break, tB	>50 / -	%	ISO 527
Charpy impact strength, +23°C	N / -	kJ/m ²	ISO 179/1eU
Charpy impact strength, 0°C	N / -	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	14 / 10.5	kJ/m ²	ISO 179/1eA
Type of failure	C / C	-	-
Charpy notched impact strength, 0°C	14 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	13 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Flexural modulus, 23°C	1700 / -	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	50 / -	MPa	ISO 178
Flexural strength, 23°C	90 / -	MPa	ISO 178

Flexural strain at flexural strength, 23°C	9 / -	%	ISO 178
Flexural strain at break, 23°C	N / -	%	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	250 / *	°C	ISO 11357-1/-3
Glass transition temperature, DSC	140 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	108 / *	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	122 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	135 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	130 / *	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	90 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	90 / *	E-6/K	ISO 11359-1/-2
Melting Temperature	250	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1020 / -	kg/m ³	ISO 1183
Water absorption	3.5 / *	%	Sim. to ISO 62
Humidity absorption	1.5 / *	%	Sim. to ISO 62
Shore D hardness	81 ^[b] / -	-	ISO 7619-1
Density	1020	kg/m ³	ASTM D 792

b: 3 seconds

Burning Behav.	dry / cond	Unit	Test Standard
Burning behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.6 / *	mm	-
Burning behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	mm	-

Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 100Hz	3.6 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.2 / -	-	IEC 62631-2-1
Dissipation factor, 100Hz	120 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	325 / -	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/P50	27 / -	kV/mm	Sim. to IEC 60243-1
CTI, test solution A, 50 drops value	600 / -	-	IEC 60112
Assessment of the insulation group	I	-	DIN EN 60664-1

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	31 / *	cm ³ /10min	ISO 1133
Temperature	285 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.7 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.8 / *	%	ISO 294-4, 2577

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	280	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

Characteristics

Processing

Film extrusion, Profile extrusion, Sheet extrusion

Special Characteristics

Halogen-free, Semi-crystalline, Environmental stress crack resistance, U.V. stabilized

Regulatory

US Pharmacopeia Class VI conformity

Additives

Release agent, Processing aids