

CELANEX® 2403MT - PBT
Description

unfilled, nucleated & faster cycle time medical grade

Preliminary Data Sheet

Celanex 2403MT Natural is a developmental unreinforced PBT with improved crystallization speed and faster cycle times.

Celanex 2403MT contains no animal derived materials.

Physical properties	Value	Unit	Test Standard
Density	81.8	lb/ft ³	ISO 1183
Melt volume rate, MVR	20	cm ³ /10min	ISO 1133
MVR temperature	482	°F	ISO 1133
MVR load	4.76	lb	ISO 1133

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	377099	psi	ISO 527-1, -2
Tensile stress at yield, 50mm/min	7980	psi	ISO 527-1, -2
Tensile strain at yield, 50mm/min	3	%	ISO 527-1, -2
Tensile nominal strain at break, 50mm/min	>35	%	ISO 527-1, -2
Flexural modulus, 23°C	363000	psi	ISO 178
Flexural strength, 23°C	11600	psi	ISO 178
Charpy impact strength, 23°C	NB	ft-lb/in ²	ISO 179/1eU
Charpy notched impact strength, 23°C	2.85	ft-lb/in ²	ISO 179/1eA
Charpy notched impact strength, -30°C	2.85	ft-lb/in ²	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	437	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	140	°F	ISO 11357-1,-2,-3

Typical injection moulding processing conditions

Pre Drying	Value	Unit
Necessary low maximum residual moisture content	0.02	%
Drying time	4	h
Drying temperature	248 - 266	°F

Temperature	Value	Unit
Hopper temperature	68 - 122	°F
Feeding zone temperature	446 - 464	°F
Zone1 temperature	446 - 464	°F
Zone2 temperature	455 - 482	°F
Zone3 temperature	455 - 482	°F
Zone4 temperature	464 - 500	°F
Nozzle temperature	464 - 500	°F
Melt temperature	455 - 500	°F
Mold temperature	149 - 205	°F
Hot runner temperature	482 - 500	°F

Speed	Value
Injection speed	medium-fast

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Other text information

Pre-drying

To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40 °F (-40 °C) at 250 °F (121 °C) for 4 hours.

Longer pre-drying times/storage

For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100 ° C.

Injection molding

Rear Temperature 450-470(230-240) deg F (deg C)
Center Temperature 460-480(235-250) deg F (deg C)
Front Temperature 470-500(240-260) deg F (deg C)
Nozzle Temperature 480-500(250-260) deg F (deg C)
Melt Temperature 460-500(235-260) deg F (deg C)
Mold Temperature 150-200(65-93) deg F (deg C)
Back Pressure 0-50 psi
Screw Speed Medium
Injection Speed Fast

Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided, in particular for flame retardant grades. Up to 25% clean and dry regrind may be used.

Injection Molding Preprocessing

To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-30 °F (-34 °C) at 250 °F (121 °C) for 4 hours.

Characteristics

Product Categories	Medical technology, Unfilled
Processing	Injection molding
Regulatory	Medical grade
Delivery Form	Pellets
Additives	Release agent
