

**Product Texts**

Celanex 2402MT is an unfilled and nucleated, easy flow PBT grade for injection molding processing.

Celanex 2402MT is a special grade developed for medical industry applications and complies with:

- CFR 21 (177.1660) of the Food and Drug Administration (FDA) and is listed in the Drug Master File (DMF 10047 (US) / 10033 (EU)) and the Device Master File (MAF 443 (US) / 1078 (EU))
- the corresponding EU and national registry regulatory requirements
- biocompatibility in tests corresponding to USP 23 Class VI/ISO 10993
- low residual monomers
- no animal products

Flammability at thickness h (0.8 HB mm)

Processing/Physical Characteristics	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melt volume-flow rate, MVR	40	cm <sup>3</sup> /10min	ISO 1133
Temperature	250	°C	-
Load	2.16	kg	-
<sup>[C]</sup> Molding shrinkage, parallel	2.0	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	2700	MPa	ISO 527
<sup>[C]</sup> Yield stress	60	MPa	ISO 527
<sup>[C]</sup> Yield strain	4	%	ISO 527
<sup>[C]</sup> Nominal strain at break	15	%	ISO 527
<sup>[C]</sup> Charpy impact strength, +23°C	135	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy impact strength, -30°C	130	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy notched impact strength, +23°C	5	kJ/m <sup>2</sup>	ISO 179/1eA
<sup>[C]</sup> Charpy notched impact strength, -30°C	4.5	kJ/m <sup>2</sup>	ISO 179/1eA

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
<sup>[C]</sup> Glass transition temperature, 10°C/min	60	°C	ISO 11357-1/-2
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	60	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 0.45 MPa	160	°C	ISO 75-1/-2
<sup>[C]</sup> Vicat softening temperature, B	190	°C	ISO 306
<sup>[C]</sup> Coeff. of linear therm. expansion, parallel	110	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.8	mm	-

[C]: CAMPUS

Other properties	Value	Unit	Test Standard
<sup>[C]</sup> Water absorption	0.45	%	Sim. to ISO 62
<sup>[C]</sup> Humidity absorption	0.2	%	Sim. to ISO 62
<sup>[C]</sup> Density	1310	kg/m <sup>3</sup>	ISO 1183

[C]: CAMPUS

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	121	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.02	%	-

Melt temperature	<b>235 - 260</b>	°C	-
Mold temperature	<b>65 - 93</b>	°C	-

**Characteristics**

**Processing**

Injection Molding

**Features**

Nucleated

**Delivery form**

Pellets

**Certifications**

Food contact, Food approval BfR, Food approval FDA 21 CFR, Medical Grade, Biocompatibility ISO 10993, US Pharmacopeia Class VI Approved, Drug Master File, Device Master File

**Additives**

Release agent

**Applications**

Medical

**Special Characteristics**

Sterilizable, Ethylene Oxide (EtO) Sterilization, Steam sterilization, Gamma irradiation sterilization

**Regional Availability**

North America, Europe, Asia Pacific, South and Central America, Near East/Africa

**Other text information**

**Injection molding**

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.

- 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.