Celanese
The chemistry inside innovation™

CELANEX® 2409MT GF30 (PRELIMINARY)

CELANEX® PBT

Developmental grade. Preliminary datasheet.
Chemical abbreviation according to ISO 1043-1: PBT GF30. Celanex® 2409MT® GF30 is a special grade developed for medical industry applications and is filled with 30% glass fiber

Product information

Resin Identification	PBT-GF30	ISO 1043
Part Marking Code	>PBT-GF30<	ISO 11469

Rheological properties

Melt volume-flow rate	12	cm^3/10min	ISO 1133
Temperature	250	°C	
Load	2.16	kg	
Moulding shrinkage, parallel	0.3	%	ISO 294-4, 2577
Moulding shrinkage range, parallel	0.2 - 0.4	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.9	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.8 - 1	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	10000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	155	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5	%	ISO 527-1/-2
Flexural modulus	10000	MPa	ISO 178
Flexural strength	230	MPa	ISO 178
Charpy impact strength, 23°C	95	kJ/m^2	ISO 179/1eU
Charpy impact strength, -30°C	75	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	10	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30°C	10	kJ/m^2	ISO 179/1eA
Ball indentation hardness, H 961/30	235	MPa	ISO 2039-1
Poisson's ratio	0.34[C]		

[C]: Calculated

Thermal properties

Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	212	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	224	°C	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	170	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	215	°C	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	30	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	90	E-6/K	ISO 11359-1/-2

Physical/Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.4	%	Sim. to ISO 62
Density	1540	kg/m^3	ISO 1183

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Injection

Drying Recommended	yes	
Drying Temperature	140	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.01	%
Melt Temperature Optimum	250	°C
Min. melt temperature	240	°C
Max. melt temperature	260	°C
Screw tangential speed	0.1 - 0.3	m/s
Mold Temperature Optimum	80	°C
Min. mould temperature	60	°C
Max. mould temperature	130	°C
Ejection temperature	194	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets

Additional information

Injection molding

To minimize the volatile content in the final product, dry the resin to ≤0.01% water content. In injection molding, use the lowest possible melt temperature (recommended 240 °C) and shortest feasible residence time (recommended 2-3 minutes). Store the parts in a ventilated, clean area before use. If assistance is needed please contact your Celanese account representative.

These recommendations are based on internal Celanese testing. For drying and injection molding conditions outside the above parameters, customer must test for and verify suitably low volatiles emissions on molded articles to confirm the final product is suitably pure for its intended use.

Processing Notes

Pre-Drying

To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.01%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°C (-40°F) at 140°C (284°F) for 4-6 hours.

Storage

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

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