

# 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 <sup>3</sup> /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 <sup>2</sup> | ISO 179/1eU  |
| Charpy impact strength, -30°C         | 75 kJ/m <sup>2</sup> | ISO 179/1eU  |
| Charpy notched impact strength, 23°C  | 10 kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy notched impact strength, -30°C | 10 kJ/m <sup>2</sup> | ISO 179/1eA  |
| Ball indentation hardness, H 961/30   | 235 MPa              | ISO 2039-1   |
| Poisson's ratio                       | 0.34 <sup>[C]</sup>  |              |

[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 <sup>3</sup> | 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.