

## CELANEX(PBT)® 5300 - PBT

### Description

30% glass reinforced, high gloss, general purpose.

Celanex 5300 is a 30% fiberglass reinforced polyester with improved surface finish.

| Physical properties             | Value     | Unit                   | Test Standard   |
|---------------------------------|-----------|------------------------|-----------------|
| Density                         | 1540      | kg/m <sup>3</sup>      | ISO 1183        |
| Melt volume rate, MVR           | 20        | cm <sup>3</sup> /10min | ISO 1133        |
| MVR temperature                 | 265       | °C                     | ISO 1133        |
| MVR load                        | 2.16      | kg                     | ISO 1133        |
| Molding shrinkage, parallel     | 0.3 - 0.5 | %                      | ISO 294-4, 2577 |
| Water absorption, 23°C-sat      | 0.4       | %                      | ISO 62          |
| Humidity absorption, 23°C/50%RH | 0.2       | %                      | ISO 62          |

| Mechanical properties                 | Value | Unit              | Test Standard |
|---------------------------------------|-------|-------------------|---------------|
| Tensile modulus                       | 10000 | MPa               | ISO 527-2/1A  |
| Tensile stress at break, 5mm/min      | 135   | MPa               | ISO 527-2/1A  |
| Tensile strain at break, 5mm/min      | 3     | %                 | ISO 527-2/1A  |
| Flexural modulus, 23°C                | 9000  | MPa               | ISO 178       |
| Flexural strength, 23°C               | 200   | MPa               | ISO 178       |
| Charpy impact strength, 23°C          | 49    | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Charpy impact strength, -30°C         | 48    | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Charpy notched impact strength, 23°C  | 9.5   | kJ/m <sup>2</sup> | ISO 179/1eA   |
| Charpy notched impact strength, -30°C | 9     | kJ/m <sup>2</sup> | ISO 179/1eA   |
| Izod impact notched, 23°C             | 8.3   | kJ/m <sup>2</sup> | ISO 180/1A    |
| Rockwell hardness (M-Scale)           | 93    | M-Scale           | ISO 2039-2    |

| Thermal properties                         | Value | Unit   | Test Standard     |
|--------------------------------------------|-------|--------|-------------------|
| Melting temperature, 10°C/min              | 225   | °C     | ISO 11357-1/-3    |
| Glass transition temperature, 10°C/min     | 60    | °C     | ISO 11357-1,-2,-3 |
| DTUL at 1.8 MPa                            | 200   | °C     | ISO 75-1, -2      |
| DTUL at 0.45 MPa                           | 220   | °C     | ISO 75-1, -2      |
| DTUL at 8.0 MPa                            | 120   | °C     | ISO 75-1, -2      |
| Vicat softening temperature, 50°C/h 50N    | 225   | °C     | ISO 306           |
| Coeff. of linear therm expansion, parallel | 0.24  | E-4/°C | ISO 11359-2       |
| Coeff. of linear therm expansion, normal   | 0.75  | E-4/°C | ISO 11359-2       |
| Limiting oxygen index (LOI)                | 20    | %      | ISO 4589-1/-2     |
| Flammability at thickness h                | HB    | class  | UL 94             |
| thickness tested (h)                       | 0.71  | mm     | UL 94             |

| Electrical properties            | Value | Unit  | Test Standard |
|----------------------------------|-------|-------|---------------|
| Relative permittivity, 100Hz     | 4.6   | -     | IEC 60250     |
| Relative permittivity, 1kHz      | 4.2   | -     | IEC 60250     |
| Volume resistivity               | >1E13 | Ohm*m | IEC 60093     |
| Surface resistivity              | >1E15 | Ohm   | IEC 60093     |
| Electric strength                | 30    | kV/mm | IEC 60243-1   |
| Comparative tracking index CTI M | 350   | -     | IEC 60112     |

### Typical injection moulding processing conditions

| Pre Drying                                      | Value     | Unit | Test Standard |
|-------------------------------------------------|-----------|------|---------------|
| Necessary low maximum residual moisture content | 0.02      | %    | -             |
| Drying time                                     | 4         | h    | -             |
| Drying temperature                              | 120 - 130 | °C   | -             |



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| Temperature              | Value       | Unit | Test Standard |
|--------------------------|-------------|------|---------------|
| Hopper temperature       | 20 - 50     | °C   | -             |
| Feeding zone temperature | 230 - 250   | °C   | -             |
| Zone1 temperature        | 230 - 250   | °C   | -             |
| Zone2 temperature        | 235 - 255   | °C   | -             |
| Zone3 temperature        | 235 - 255   | °C   | -             |
| Zone4 temperature        | 240 - 260   | °C   | -             |
| Nozzle temperature       | 250 - 265   | °C   | -             |
| Melt temperature         | 235 - 265   | °C   | -             |
| Mold temperature         | 65 - 93     | °C   | -             |
| Hot runner temperature   | 250 - 265   | °C   | -             |
| Speed                    | Value       | Unit | Test Standard |
| Injection speed          | medium-fast | -    | -             |

### 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) for 4 hours.

#### Longer pre-drying times/storage

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

### Characteristics

| Product Categories | Delivery Form         |
|--------------------|-----------------------|
| Glass reinforced   | Pellets               |
| Processing         | Regional Availability |
| Injection molding  | North America         |

