

# CELSTRAN® PP-GF40-0453 ECO-B 352 BLACK

## CELSTRAN® Long Fibre

Material code according to ISO 1043-1: PP Heat stabilized polypropylene reinforced with 40 weight percent long glass fibers, low emission grade. Black. The fibers are chemically coupled to the polypropylene matrix. The pellets are cylindrical and normally as well as the embedded fibers 11 mm long. Parts molded of CELSTRAN have outstanding mechanical properties such as high strength and stiffness combined with high heat deflection. The notched impact strength is increased at elevated and low temperatures due to the fiber skeleton built in the parts. The long fiber reinforcement reduces creep significantly. The very isotropic shrinkage in the molded parts minimizes the warpage. Complex parts can be manufactured with high reproducibility by injection molding. Application field: Functional/structural parts for automotive.

*Celstran ECO-B is a long fibre reinforced thermoplastic (LFRT) with the same properties and performance as standard grades, but produced with sustainability in mind. Using a mass-balance approach, 30% of biogenic feedstocks are used to offset the use of fossil-based raw materials and decrease greenhouse gas emissions. The process will be audited and certified according to the ISCC mass balance approach.*

### Product information

|                      |            |           |
|----------------------|------------|-----------|
| Resin Identification | PP-LGF40   | ISO 1043  |
| Part Marking Code    | >PP-LGF40< | ISO 11469 |

### Typical mechanical properties

|                                        |                      |              |
|----------------------------------------|----------------------|--------------|
| Tensile modulus                        | 9200 MPa             | ISO 527-1/-2 |
| Tensile stress at break, 5mm/min       | 130 MPa              | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min       | 2 %                  | ISO 527-1/-2 |
| Flexural modulus                       | 9000 MPa             | ISO 178      |
| Flexural strength                      | 200 MPa              | ISO 178      |
| Charpy impact strength, 23 °C          | 62 kJ/m <sup>2</sup> | ISO 179/1eU  |
| Charpy impact strength, -30 °C         | 60 kJ/m <sup>2</sup> | ISO 179/1eU  |
| Charpy notched impact strength, 23 °C  | 25 kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy notched impact strength, -30 °C | 30 kJ/m <sup>2</sup> | ISO 179/1eA  |
| Poisson's ratio                        | 0.34 <sup>[C]</sup>  |              |

[C]: Calculated

### Thermal properties

|                                               |        |                |
|-----------------------------------------------|--------|----------------|
| Melting temperature, 10 °C/min                | 166 °C | ISO 11357-1/-3 |
| Temperature of deflection under load, 1.8 MPa | 158 °C | ISO 75-1/-2    |
| Temperature of deflection under load, 8 MPa   | 134 °C | ISO 75-1/-2    |

### Physical/Other properties

|         |                        |          |
|---------|------------------------|----------|
| Density | 1210 kg/m <sup>3</sup> | ISO 1183 |
|---------|------------------------|----------|

### VDA Properties

|                                                  |           |         |
|--------------------------------------------------|-----------|---------|
| Emission of organic compounds                    | 30 µgC/g  | VDA 277 |
| Thermal desorption analysis of organic emissions | 56 µg/g   | VDA 278 |
| Odour                                            | 3.5 class | VDA 270 |

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### Injection

|                                 |             |
|---------------------------------|-------------|
| Drying Temperature              | 100 °C      |
| Drying Time, Dehumidified Dryer | 2 h         |
| Processing Moisture Content     | ≤0.2 %      |
| Melt Temperature Optimum        | 225 °C      |
| Screw tangential speed          | ≤0.0982 m/s |
| Min. mould temperature          | 30 °C       |
| Max. mould temperature          | 70 °C       |
| Hold pressure range             | 40 - 80 MPa |
| Back pressure                   | 3 MPa       |

### Characteristics

|                         |                                                                                    |
|-------------------------|------------------------------------------------------------------------------------|
| Processing              | Injection Moulding, Extrusion, Sheet Extrusion, Other Extrusion, Transfer Moulding |
| Delivery form           | Pellets                                                                            |
| Special characteristics | Heat stabilised or stable to heat, Low emissions                                   |
| Sustainability          | Bio-Content                                                                        |

### Additional information

#### Processing Notes

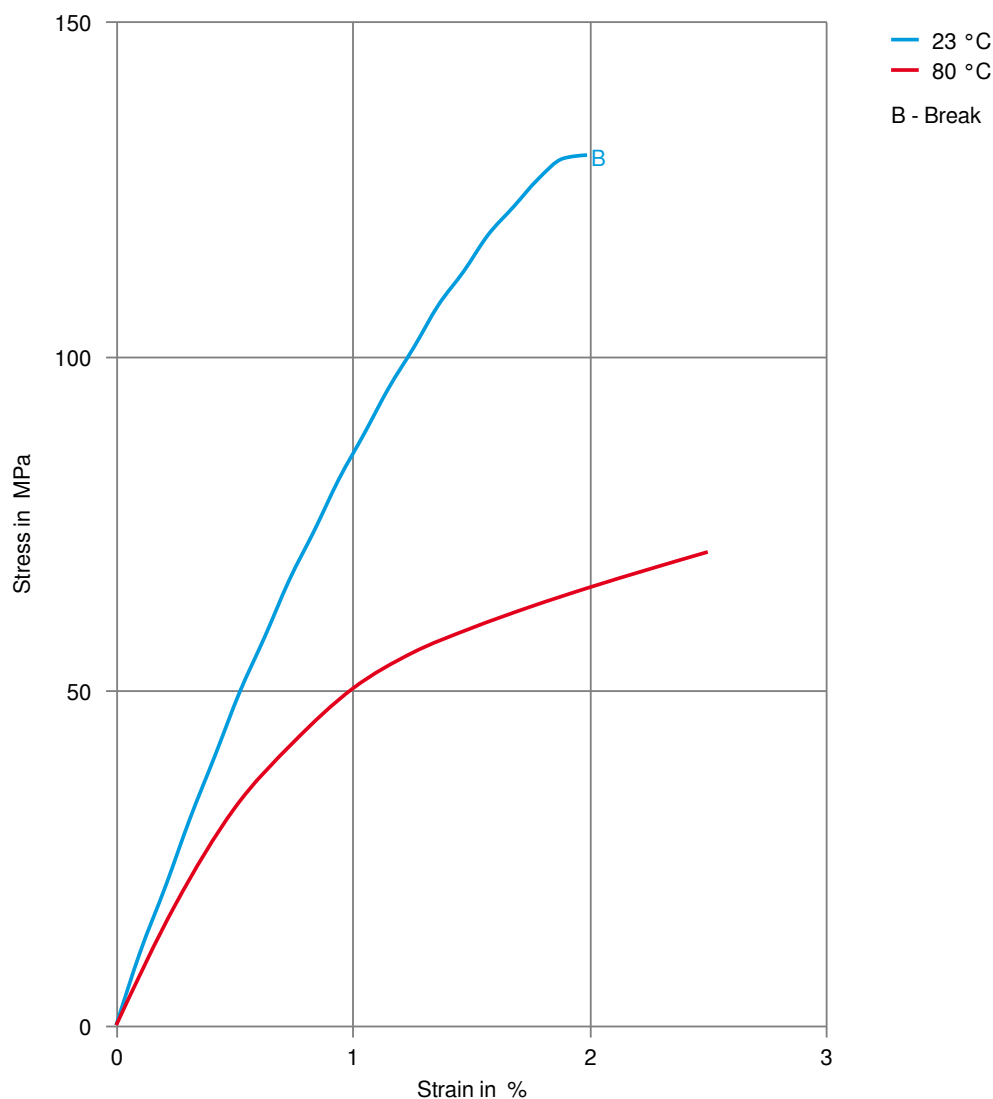
#### Pre-Drying

It is normally not necessary to dry CELSTRAN PP

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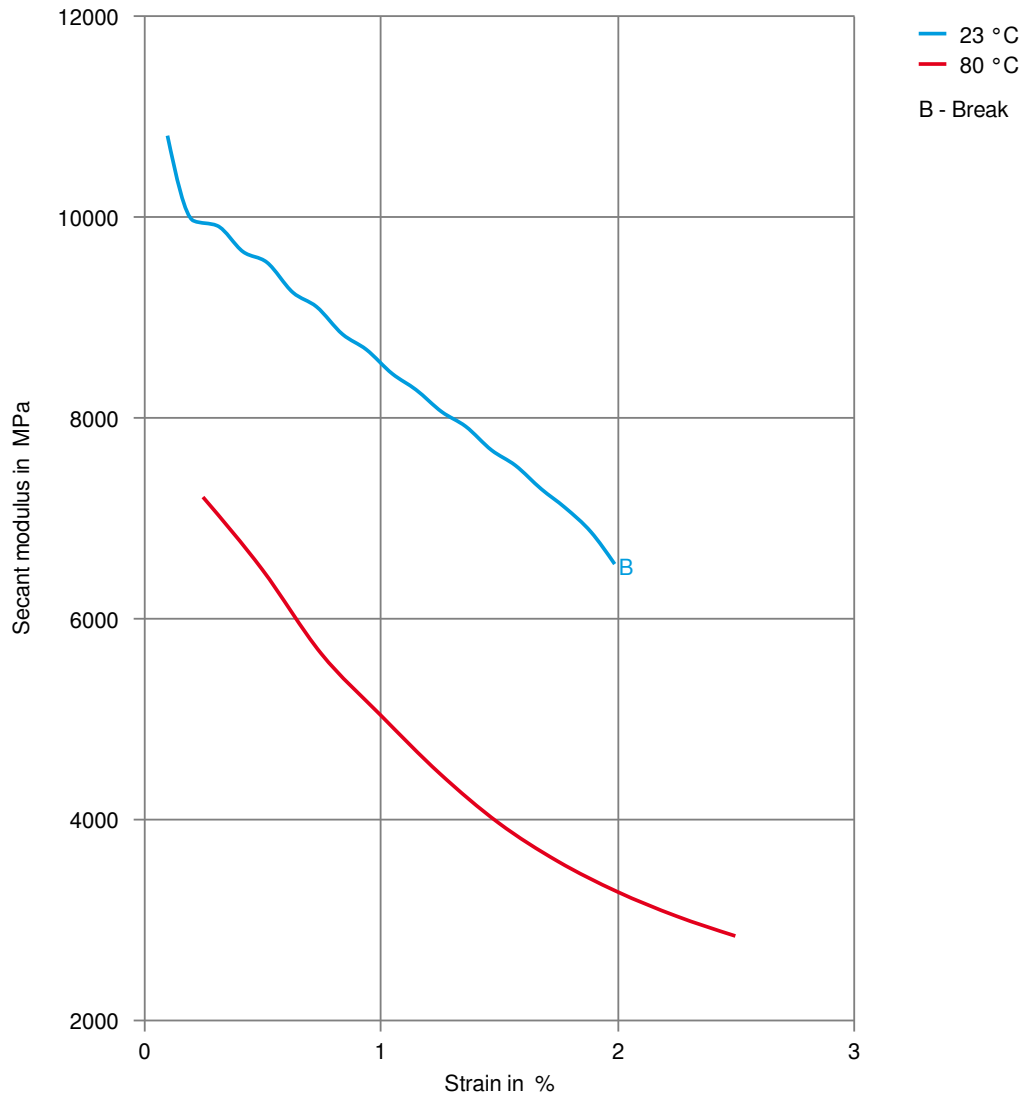
### Stress-strain



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### Secant modulus-strain



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