PRODUCT DATA SHEET

21.07.2016 Ed.2

## Polypropylene

# Fibremod™ CB401SY

Polypropylene, Carbon Fibre Reinforced

## Description

**Fibremod CB401SY** is a 40% carbon fibre reinforced engineering polypropylene grade intended for injection moulding. The carbon fibres, chemically coupled to the polypropylene matrix, are providing outstanding mechanical properties enabling to reduce weight in high performance plastics applications.

Due to its excellent combination of properties this material can substitute in many applications other engineering plastics or metal alloys. A significant value of this material is the fact that it does not change its mechanical properties at humid conditions or water contact.

## Applications

**Fibremod CB401SY** has been developed especially for demanding applications in the automotive industry.

Door module carriers
Structural seat parts
Engine components
Tailgate carriers

## Physical Properties

| Property | Typical Value<br>Data should not be used for specification work | Test Method |
|---|---|---|
| Density | 1130 kg/m³ | ISO 1183 |
| Melt Flow Rate (230 °C/2,16 kg) | 2 g/10min | ISO 1133 |
| Flexural Modulus (2 mm/min) | 18.000 MPa | ISO 178 |
| Tensile Strength | 115 MPa | ISO 527-2 |
| Charpy Impact Strength, notched (23 °C) | 5 kJ/m² | ISO 179/1eA |
| Charpy Impact Strength, notched (-20 °C) | 4 kJ/m² | ISO 179/1eA |

Values determined on standard injection moulded specimens conditioned at 23°C and 50% relative humidity after at least 96 hours storage time.

## Application Related and Other Tests

| Property | Typical Value<br>Data should not be used for specification work | Test Method |
|---|---|---|
| Fogging (100 °C,16 h) | < 2 mg | DIN 75201 |
| Emission | < 50 µgC/g | VDA 277 |

## Processing Techniques

The actual conditions will depend on the type of equipment used.

### Injection Moulding

This product is easy to process with standard injection moulding machines. To avoid residual humidity from transport or storage, the material should be pre-dried approximately 2h at 80°C. Following parameters should be used as guidelines:



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The fibre length in the final part is the key factor determining the mechanical properties. The main goal of the moulding recommendation is to limit fibre breakage to a minimum.

Therefore it is favourable to melt the material as quickly as possible to prevent excessive fibre breakage in the feeding section.

Low work during plastification and smooth flow during moulding provides the most reinforcing fibre structure for the final part.

Further specific recommendations for processing conditions can be determined only when the application and type of equipment are know. Please contact your local Borealis representative for specific assistance.

| | |
|---|---|
| Feeding temperature | 40 - 80 °C |
| Mass temperature | 220 - 260 °C |
| Back pressure | As low as possible |
| Holding pressure | 30 - 60 MPa |
| Mould temperature | 40 - 80 °C |
| Screw speed | Low to medium |
| Flow front speed | 100 - 200 mm/s |

## Storage
**Fibremod CB401SY** should be stored in dry conditions at temperatures below 50°C and protected from UV-light. Improper storage can initiate degradation, which results in odour generation and colour changes and can have negative effects on the physical properties of this product.

## Safety
The product is not classified as dangerous.

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety of the product. For more information, contact your Borealis representative.

## Recycling
The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of recovery and disposal of the product.

## Regional Availability
Europe
For information on regional availability please contact Borealis Sales Representative.

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