

## Technical Data Sheet



### ALCOM PBT 700/1 GF30 PTFE15

|                        |                                                      |
|------------------------|------------------------------------------------------|
| Base Polymer           | Polybutylene Terephthalate                           |
| Filler/Additive System | 30 % glass fibres, 15 % PTFE                         |
| Special Features       | improved sliding / wear, high stiffness              |
| Market Segment         | Automotive, Machinery                                |
| Application Area       | gear wheels, roller bearings                         |
| Typical Applications   | functional components, bearings and sliding elements |

|                               |                                                                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Pre-Drying Conditions         | in a dry air (dessiccant) dryer 100-120 °C<br>for 2-4 h<br>in an air circulating dryer 100-120 °C<br>for 4-8 h<br>dependant on moisture content |
| Processing Injection Moulding | melt temperature 250-270 °C<br>mould temperature 80-120 °C                                                                                      |
| Storage                       | dry, protected from light                                                                                                                       |

| Properties                              | Value     | Dimension              | Test Norm   |
|-----------------------------------------|-----------|------------------------|-------------|
| <b>Mechanical Properties</b>            |           |                        |             |
| Flexural Modulus                        | 9300      | MPa                    | ISO 178     |
| Flexural Strength                       | 200       | MPa                    | ISO 178     |
| Tensile Modulus                         | 10400     | MPa                    | ISO 527     |
| Tensile Strength at Break               | 125       | MPa                    | ISO 527     |
| Tensile Elongation at Break             | 2.8       | %                      | ISO 527     |
| Impact Strength (Charpy, 23°C)          | 60        | kJ/m <sup>2</sup>      | ISO 179/1eU |
| Impact Strength (Charpy, -40°C)         | 70        | kJ/m <sup>2</sup>      | ISO 179/1eU |
| Notched Impact Strength (Charpy, 23°C)  | 9         | kJ/m <sup>2</sup>      | ISO 179/1eA |
| Notched Impact Strength (Charpy, -40°C) | 8.5       | kJ/m <sup>2</sup>      | ISO 179/1eA |
| <b>Thermal Properties</b>               |           |                        |             |
| Vicat B50                               | 214       | °C                     | ISO 306     |
| HDT / A (1,8 MPa)                       | 210       | °C                     | ISO 75-1/-2 |
| DSC (Melt Point)                        | 225       | °C                     | ISO 11357   |
| <b>Rheological Properties</b>           |           |                        |             |
| Melt Index (MVR)                        | 8         | cm <sup>3</sup> /10min | ISO 1133    |
| MVR temperature                         | 260       | °C                     | -           |
| MVR load                                | 2.16      | kg                     | -           |
| Shrinkage (lengthwise, 24h)             | 0.1 - 0.3 | %                      | ISO 294-4   |
| Shrinkage (lateral, 24h)                | 0.8 - 1   | %                      | ISO 294-4   |
| <b>Physical Properties</b>              |           |                        |             |
| Density                                 | 1650      | kg/m <sup>3</sup>      | ISO 1183    |

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#### Tribologic Properties

|                                                                                            |      |                             |            |
|--------------------------------------------------------------------------------------------|------|-----------------------------|------------|
| Coefficient of Sliding Friction $\mu$ ( $p_v = 5 \cdot 1 \text{ MPa} \cdot \text{m/s}$ )   | 0.3  | -                           | ASTM G 137 |
| Coefficient of Sliding Friction $\mu_H$ ( $p_v = 5 \cdot 1 \text{ MPa} \cdot \text{m/s}$ ) | 0.23 | -                           | ASTM G 137 |
| Specific Wear Rate $w_s$ ( $p_v = 5 \cdot 1 \text{ MPa} \cdot \text{m/s}$ )                | 1.5  | E-6 $\text{mm}^3/\text{Nm}$ | ASTM G 137 |
| Linear Wear Rate $w$ ( $p_v = 5 \cdot 1 \text{ MPa} \cdot \text{m/s}$ )                    | 27   | $\mu\text{m/h}$             | ASTM G 137 |