

# **Ultradur® B 4520 High Speed Polybutylene Terephthalate (PBT)**



## Product Description

Ultradur B 4520 High Speed is an unfilled, easy flowing, injection molding PBT grade.

## Applications

Ultradur B 4520 High Speed is designed for connectors and other technical parts.

| PHYSICAL                                    | ISO Test Method | Property Value |
|---------------------------------------------|-----------------|----------------|
| Density, g/cm <sup>3</sup>                  | 1183            | 1.30           |
| Viscosity Number, cm <sup>3</sup> /g        | 1628            | 115            |
| Mold Shrinkage, parallel, %                 | 294-4           | 1.8            |
| Mold Shrinkage, normal, %                   | 294-4           | 1.9            |
| Moisture, %                                 | 62              |                |
| (50% RH)                                    |                 | 0.25           |
| (Saturation)                                |                 | 0.5            |
| RHEOLOGICAL                                 | ISO Test Method | Property Value |
| Melt Volume Rate (250 C/2.16 Kg), cc/10min. | 1133            | 50             |
| MECHANICAL                                  | ISO Test Method | Property Value |
| Tensile Modulus, MPa                        | 527             |                |
| 23C                                         |                 | 2,200          |
| Tensile stress at yield, MPa                | 527             |                |
| 23C                                         |                 | 50             |
| Tensile strain at yield, %                  | 527             |                |
| 23C                                         |                 | 3.5            |
| Nominal strain at break, %                  | 527             |                |
| 23C                                         |                 | >50            |
| IMPACT                                      | ISO Test Method | Property Value |
| Charpy Notched, kJ/m <sup>2</sup>           | 179             |                |
| 23C                                         |                 | 4              |
| Charpy Unnotched, kJ/m <sup>2</sup>         | 179             |                |
| 23C                                         |                 | 190            |
| THERMAL                                     | ISO Test Method | Property Value |
| Melting Point, C                            | 3146            | 223            |
| HDT A, C                                    | 75              | 55             |
| HDT B, C                                    | 75              | 130            |

## Processing Guidelines

### Material Handling

Max. Water content: 0.04%

To ensure optimum part performance, this product must be dried prior to molding and maintained at a moisture level of less than 0.04%. Dehumidifying or desiccant dryers operating at 100-120C (212-248F) at 4 hours drying time is recommended. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF representative.

## Typical Profile

Melt Temperature 250-270C (482-518F)

Mold Temperature 40-80C (104-176F)

Injection and Packing Pressure 35-125 bar (500-1500 psi)

## Mold Temperatures

This product can be processed over mold temperatures of 40-80C (104-176F), although 80C (176 deg F) will result the best surface.

## Pressures

Injection pressure controls the filling of the part and should be applied for 90% of ram travel.

Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas. A maximum of 10 bar (145 psi) is recommended due to the risk of excessive shear.

## Fill Rate

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate.

## Note

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