

# Ultradur® B 4520

## PBT (Polybutylene Terephthalate)



### Product Description

Ultradur B 4520 is a medium viscosity, rapidly freezing injection molding grade.

### Applications

Typical applications include chassis and housings for home appliances, office and sewing machines, and coil formers.

PHYSICAL	ASTM Test Method	Property Value
Specific Gravity	D-792	1.30
Mold Shrinkage (1/8" bar, in/in)		0.015
Moisture, %	D-570	
(50% RH)		0.25
(Saturation)		0.5
MECHANICAL	ASTM Test Method	Property Value
Tensile Strength, Yield, MPa (psi)	D-638	
23C (73F)		60 (8,700)
Elongation, Yield, %	D-638	
23C (73F)		3.7
Flexural Modulus, MPa (psi)	D-790	
23C (73F)		2,300 (334,000)
IMPACT	ASTM Test Method	Property Value
Notched Izod Impact, J/M (ft-lbs/in)	D-256	
-40C (-40F)		37 (0.7)
23C (73F)		43 (0.8)
THERMAL	ASTM Test Method	Property Value
Melting Point, C(F)	D-3418	223 (433)
Heat Deflection @ 264 psi (1.8 MPa) C(F)	D-648	60 (140)
Heat Deflection @ 66 psi (.45 MPa) C(F)	D-648	163 (325)
UL RATINGS	UL Test Method	Property Value
Flammability Rating, 0.75mm	UL94	HB
Relative Temperature Index, 0.75mm	UL746B	
Mechanical w/o Impact, C		140
Mechanical w/ Impact, C		130
Electrical, C		130
Flammability Rating, 1.5mm	UL94	HB
Relative Temperature Index, 1.5mm	UL746B	
Mechanical w/o Impact, C		140
Mechanical w/ Impact, C		130
Electrical, C		130
Flammability Rating, 2.8mm	UL94	HB
Relative Temperature Index, 2.8mm	UL746B	
Mechanical w/o Impact, C		140

Mechanical w/ Impact, C		130
Electrical, C		130
ELECTRICAL		
	ASTM Test Method	Property Value
Volume Resistivity (Ohm-m)	D-257	>1E13
Surface Resistivity (Ohm)	D-257	1E13

**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**

Although all statements and information in this publication are believed to be accurate and reliable, they are presented gratis and for guidance only, and risks and liability for results obtained by use of the products or application of the suggestions described are assumed by the user. NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH. Statements or suggestions concerning possible use of the products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that toxicity data and safety measures are indicated or that other measures may not be required.