

Ultradur® B 4500

PBT (Polybutylene Terephthalate)



Product Description

Ultradur B 4500 is a general-purpose injection molding PBT grade for high precision, high toughness and dimensionally stable engineering parts.

Applications

Typical applications include cams, valve cones, sewing machine components, and central heating meters.

PHYSICAL	ASTM Test Method	Property Value
Specific Gravity	D-792	1.3
Mold Shrinkage (1/8" bar, in/in)		0.015
Moisture, % (50% RH)	D-570	0.25
(Saturation)		0.5
MECHANICAL	ASTM Test Method	Property Value
Tensile Strength, Yield, MPa (psi) 23C (73F)	D-638	60 (8,700)
Elongation, Yield, % 23C (73F)	D-638	3.7
IMPACT	ASTM Test Method	Property Value
Notched Izod Impact, J/M (ft-lbs/in) -40C (-40F)	D-256	53 (1.0)
23C (73F)		53 (1.0)
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	66 (150)
Heat Deflection @ 66 psi (.45 MPa) C(F)	D-648	164 (327)
UL RATINGS	UL Test Method	Property Value
Flammability Rating, 1.5mm	UL94	HB
Relative Temperature Index, 1.5mm Mechanical w/ Impact, C	UL746B	105
Electrical, C		130
ELECTRICAL	ASTM Test Method	Property Value
Volume Resistivity, 1.5 mm	D-257	>1E13
Surface Resistivity, 1.5 mm	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 100-120 degC (212-248 degF) at 4 hours drying time is recommended. Further information concerning safe handling procedures can be obtained from the Material Safety Data Sheet. Alternatively, please contact your BASF representative.



BASF Corporation
Engineering Plastics
609 Biddle Avenue
Ypsilanti, MI 48192



Typical Profile

Melt Temperature 250-270 degC (482-518 degF)
Mold Temperature 40-80 degC (104-176 degF)
Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures

This product can be processed over mold temperatures of 40-80 degC (104-176 degF), although 80 degC (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.



BASF Corporation
Engineering Plastics
609 Biddle Avenue
Ypsilanti, MI 48192

