

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	1.3
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	
23°C (73°F)		60 (8,700)
Elongation, Yield, %	D-638	
23°C (73°F)		3.7
Flexural Modulus, MPa (psi)	D-790	
23°C (73°F)		2,300 (334,000)
IMPACT	ASTM Test Method	Property Value
Notched Izod Impact, J/M (ft-lbs/in)	D-256	
-40°C (-40°F)		37 (0.7)
23°C (73°F)		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, 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.

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

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