Ultradur® B 4520

Polybutylene Terephthalate (PBT)

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	ISO Test Method	Property Value
Density, g/cm³	1183	1.30
Viscosity Number, cm³/g	1628	130
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	19
MECHANICAL	**ISO Test Method**	**Property Value**
Tensile Modulus, MPa	527	
23°C		2,500
Tensile stress at yield, MPa	527	
-40°C		94
23°C		60
80°C		22
120°C		18
Tensile strain at yield, %	527	
23°C		3.7

Nominal strain at break, %	527	
23°C		>50
Flexural Modulus, MPa	178	
23°C		2,400
Tensile Creep Modulus (1000h), MPa	899	1,200
Tensile Creep Modulus (1h), MPa	899	1,800
IMPACT	**ISO Test Method**	**Property Value**
Charpy Notched, kJ/m^2	179	
-30°C		3
23°C		6
Charpy Unnotched, kJ/m^2	179	
23°C		N
THERMAL	**ISO Test Method**	**Property Value**
Melting Point, °C	3146	223
HDT A, ° C	75	60
HDT B, ° C	75	165
Coef. of Linear Thermal Expansion, Parallel, mm/mm °C		1.45 X10-4
ELECTRICAL	**ISO Test Method**	**Property Value**
Comparative Tracking Index	IEC 60112	550
Volume Resistivity (Ohm-m)	IEC 60093	>1E13
Surface Resistivity (Ohm)	IEC 60093	1E13
Dielectric Constant (100 Hz)	IEC 60250	3.4
Dielectric Constant (1 MHz)	IEC 60250	3.3
Dissipation Factor (100 Hz), E-4	IEC 60250	20
Dissipation Factor (1 MHz), E-4	IEC 60250	200
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

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°C (212-248°F) 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 250-270°C (482-518°F)
Mold Temperature 40-80°C (104-176°F)
Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures
This product can be processed over mold temperatures of 40-80°C (104-176°F), although 80°C (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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