

Ultradur[®] B 4300 G2

PBT (Polybutylene Terephthalate)

Product Description

Ultradur B 4300 G2 is an easy flowing injection molding PBT with 10% glass fiber reinforcement for rigid, tough, and dimensionally stable parts.

Applications

Typical applications include timer dials, toggles, knobs, parts for thermostats, oven-door handles, toaster housings and grills.

PHYSICAL	ISO Test Method	Property Value
Density, g/cm ³	1183	1.37
Viscosity Number, cm ³ /g	1628	115
Mold Shrinkage, parallel, %	294-4	1.22
Mold Shrinkage, normal, %	294-4	1.38
Moisture, %	62	
(50% RH)		0.2
(Saturation)		0.4
RHEOLOGICAL	ISO Test Method	Property Value
Melt Volume Rate (250 °C/2.16 Kg), cc/10min.	1133	16
MECHANICAL	ISO Test Method	Property Value
Tensile Modulus, MPa	527	
23°C		4,500
Tensile stress at break, MPa	527	
-40°C		111
23°C		90
Tensile strain at break, %	527	
23°C		3.5
Flexural Modulus, MPa	178	
23°C		3,900
IMPACT	ISO Test Method	Property Value
Izod Notched Impact, kJ/m ²	180	
23°C		5
Charpy Notched, kJ/m ²	179	
23°C		5
Charpy Unnotched, kJ/m ²	179	
23°C		40
-30°C		38
THERMAL	ISO Test Method	Property Value
Melting Point, °C	3146	223
HDT A, °C	75	200
HDT B, °C	75	220
Coef. of Linear Thermal Expansion, Parallel, mm/mm °C		0.45 X10-4
ELECTRICAL	ISO Test Method	Property Value
Comparative Tracking Index	IEC 60112	300
Volume Resistivity	IEC 60093	>1E13
Surface Resistivity	IEC 60093	1E13
Dielectric Constant (100 Hz)	IEC 60250	3.6
Dielectric Constant (1 MHz)	IEC 60250	3.6
Dissipation Factor (100 Hz)	IEC 60250	12
Dissipation Factor (1 MHz)	IEC 60250	150
UL RATINGS	UL Test Method	Property Value
Relative Temperature Index, 0.75mm	UL746B	
Mechanical w/o Impact, °C		125
Mechanical w/ Impact, °C		125
Electrical, °C		130
Flammability Rating, 1.5mm	UL94	HB
Relative Temperature Index, 1.5mm	UL746B	
Mechanical w/o Impact, °C		125
Mechanical w/ Impact, °C		125
Electrical, °C		130
Flammability Rating, 3.0mm	UL94	HB
Relative Temperature Index, 3.0mm	UL746B	
Mechanical w/o Impact, °C		140
Mechanical w/ Impact, °C		125
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 degC (212-248 degF) for 4 hours drying time are 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 60-100 degC (140-212 degF)

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

Mold Temperatures

This product can be processed over mold temperatures of 60-100 degC (140-212 degF); however, for optimizing surface appearance, dimensional stability and part performance, mold surface temperatures of at least 80 degC (176 degF) are preferred.

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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