Product Information

Oct 2016

Ultradur® B 4441 G5

PBT (Polybutylene Terephthalate)

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Product Description

Ultradur B 4441 G5 is a 25% glass reinforced injection molding PBT optimized for glow wire requirements. For parts requiring enhanced fire resistance. (Halogen and Antimon free)

Applications

Typical applications include components for household appliances, connectors, and power switches.

PHYSICAL	ISO Test Method	Property Value
Density, g/cm³	1183	1.53
Viscosity Number, cm³/g	1628	105
Mold Shrinkage, parallel, %	294-4	0.44
Mold Shrinkage, normal, %	294-4	1.24
Moisture, %	62	
(50% RH)		0.2
(Saturation)		0.4
RHEOLOGICAL	**ISO Test Method**	**Property Value**
Melt Volume Rate (275 °C/2.16 Kg), cc/10min.	1133	15
MECHANICAL	**ISO Test Method**	**Property Value**
Tensile Modulus, MPa	527	
23°C		9,800
Tensile stress at break, MPa	527	
23°C		110
Tensile strain at break, %	527	
23°C		2.3
Flexural Strength, MPa	178	
23°C		180
Flexural Modulus, MPa	178	
23°C		10,000
IMPACT	**ISO Test Method**	**Property Value**
Charpy Notched, kJ/m^2	179	
23°C		7
Charpy Unnotched, kJ/m^2	179	
-30°C		47
23°C		45
THERMAL	**ISO Test Method**	**Property Value**
Melting Point, °C	3146	223
HDT A, ° C	75	210
HDT B, ° C	75	220
ELECTRICAL	**ISO Test Method**	**Property Value**
Comparative Tracking Index	IEC 60112	525
Volume Resistivity (Ohm)	IEC 60093	1E14
Surface Resistivity (Ohm-m)	IEC 60093	>1E16
Dielectric Constant (1 MHz)	IEC 60250	3.6
Dissipation Factor (1 MHz)	IEC 60250	137
UL RATINGS	**UL Test Method**	**Property Value**
Flammability Rating, 0.4mm	UL94	V-0
Flammability Rating, 1.5mm	UL94	5VA
Relative Temperature Index, 1.5mm	UL746B	
Electrical, °C		140

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) for 4 hours drying time are 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 60-100°C (140-212°F)

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

Mold Temperatures

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

BASF Corporation
Engineering Plastics
1609 Biddle Avenue
Wyandotte, MI 48192

General Information: 800-BC-RESIN
Technical Assistance: 800-527-TECH (734-324-5150)
Web address: http://www.plasticsportal.com/usa

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