Product Information

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Ultramid® B3WG7

Polyamide 6

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Product Description

Ultramid B3WG7 is a 35% glass fiber reinforced injection molding PA6 grade for highly rigid, dimensionally stable components which are resistant to high temperature aging and have improved retention of properties in a hot water environment.

Applications

Typical applications include automotive clutch and accelerator pedals.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm³	1183	1.41	
Moisture, %	62		
(50% RH)		2	
(Saturation)		6.2	
RHEOLOGICAL	**ISO Test Method**	**Dry**	**Conditioned**
Melt Volume Rate (275 °C/5 Kg), cc/10min.	1133	45	-
MECHANICAL	**ISO Test Method**	**Dry**	**Conditioned**
Tensile Modulus, MPa	527		
23°C		11,000	7,200
Tensile stress at break, MPa	527		
23°C		195	130
Tensile strain at break, %	527		
-40°C		3.8	-
23°C		3.5	7.0
Flexural Modulus, MPa	178		
23°C		10,000	-
IMPACT	**ISO Test Method**	**Dry**	**Conditioned**
Charpy Notched, kJ/m^2	179		
-30°C		13	-
23°C		18	33
Charpy Unnotched, kJ/m^2	179		
-30°C		90	-
23°C		100	110
THERMAL	**ISO Test Method**	**Dry**	**Conditioned**
Melting Point, °C	3146	220	-
HDT A, ° C	75	215	-
HDT B, ° C	75	220	-
Coef. of Linear Thermal Expansion, Parallel, mm/mm °C		0.18 X10-4	-
Coef. of Linear Thermal Expansion, Normal, mm/mm °C		0.65 X10-4	-
ELECTRICAL	**ISO Test Method**	**Dry**	**Conditioned**
Comparative Tracking Index	IEC 60112	450	450
Volume Resistivity (Ohm)	IEC 60093	1E13	1E10
Dielectric Constant (1 MHz)	IEC 60250	3.9	6.2
Dissipation Factor (100 Hz)	IEC 60250	210	1,900
Dissipation Factor (1 MHz)	IEC 60250	210	1,900
UL RATINGS	**UL Test Method**	**Property Value**	
Relative Temperature Index, 0.75mm	UL746B		
Electrical, °C		130	
Flammability Rating, 1.5mm	UL94	HB	
Relative Temperature Index, 1.5mm	UL746B		
Mechanical w/o Impact, °C		130	
Mechanical w/ Impact, °C		90	
Electrical, °C		130	
Flammability Rating, 3.0mm	UL94	HB	
Relative Temperature Index, 3.0mm	UL746B		
Mechanical w/o Impact, °C		130	
Mechanical w/ Impact, °C		100	
Electrical, °C		130	

Processing Guidelines

Material Handling

Max. Water content: 0.15%

Material is supplied in sealed containers and drying prior to molding in a dehumidifying or desiccant dryer is recommended. Drying parameters are dependent upon the actual percentage of moisture in the pellets and typical pre-drying conditions are 2-4 hours at 180F (83C). Recommended moisture levels for achieving optimum surface qualities and mechanical properties is 0.05% - 0.12%. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet (MSDS), or by contacting your BASF representative.

Typical Profile

Melt Temperature 270-295 degC (518-563 degF)
Mold Temperature 80-95 degC (176-203 degF)
Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures
This product can be processed over a wide range of mold temperatures; however, for applications where aesthetics are critical, a mold surface temperature of 80-95 degC (176-203 degF) is recommended.

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. Minimal back pressure should be utilized to prevent glass breakage.

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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