

Ultramid® B3WG5

Polyamide 6



Product Description

Ultramid B3WG5 is a 25% glass fiber reinforced injection molding PA6 grade with heat aging resistance.

Applications

Typical applications include fan wheels.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm	1183	1.32	
Moisture, %	62		
(50% RH)		2.3	
(Saturation)		7.1	
RHEOLOGICAL	ISO Test Method	Dry	Conditioned
Melt Volume Rate (275 C/5 Kg), cc/10min.	1133	55	-
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23C		8,000	5,500
Tensile stress at break, MPa	527		
23C		160	105
Tensile strain at break, %	527		
23C		3.5	8.5
Flexural Modulus, MPa	178		
23C		7,400	-
IMPACT	ISO Test Method	Dry	Conditioned
Charpy Notched, kJ/m ²	179		
23C		12	25
-30C		10	-
Charpy Unnotched, kJ/m ²	179		
23C		80	105
-30C		75	-
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, C	3146	220	-
HDT A, C	75	210	-
HDT B, C	75	220	-
Coef. of Linear Thermal Expansion, Parallel, mm/mm C		0.23 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	IEC 60093	1E13	1E10
Dielectric Constant (1 MHz)	IEC 60250	3.8	7
Dissipation Factor (100 Hz)	IEC 60250	250	2,400



Dissipation Factor (1 MHz) IEC 60250 250 2,400

UL RATINGS	UL Test Method	Property Value
Flammability Rating, 1.5mm	UL94	HB
Relative Temperature Index, 1.5mm	UL746B	
Mechanical w/o Impact, C		130
Mechanical w/ Impact, C		95
Electrical, C		130

Processing Guidelines

Material Handling

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 Material 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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