

Product Description

Ultramid D3WG12 HMG BK00102 is a 60% glass reinforced, injection molding polyamide offering high strength and stiffness. Due to inherently lower moisture absorption, Ultramid D3WG12 HMG BK00102 shows improved retention of mechanical properties after moisture conditioning. In addition, molded parts possess an exceptional surface finish.

Applications

Ultramid D3WG12 HMG BK00102 was designed for applications requiring very high rigidity and should be considered for components that are constructed with metal.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm ³	1183	1.75	
Mold Shrinkage, parallel, %	294-4	0.19	
Mold Shrinkage, normal, %	294-4	0.25	
Moisture, %	62		
(50% RH)		1.0	
(Saturation)		2.5	

MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23°C		20,200	20,830
Tensile stress at break, MPa	527		
23°C		248	220
Tensile strain at break, %	527		
23°C		2.5	2.2
Flexural Strength, MPa	178		
23°C		383	351
Flexural Modulus, MPa	178		
23°C		18,900	19,400

IMPACT	ISO Test Method	Dry	Conditioned
Izod Notched Impact, kJ/m ²	180		
-40°C		12	11
23°C		13	13
Charpy Notched, kJ/m ²	179		
-30°C		12	12
23°C		13	15
Charpy Unnotched, kJ/m ²	179		
-30°C		95	85
23°C		99	93

THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, °C	3146	260	-
HDT A, °C	75	224	-

Processing Guidelines**Material Handling**

Max. Water content: 0.15%

Product is supplied in sealed containers and drying prior to molding is not required. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 80°C (176°F) is recommended. Drying time is dependent on moisture level, However 2-4 hours is generally sufficient. 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. Alternatively, please contact your BASF representative.

Typical Profile

Melt Temperature 280-305°C (536-581°F)

Mold Temperature 80-90°C (176-194°F)

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

Mold Temperatures

A mold temperature of 80-90°C (176-194°F) is recommended, however temperatures of as low as 45°C (113°F) and as high as 105°C (221°F) can be used where applicable.

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.

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