

Ultramid® HMG13 HS BK-102

Polyamide 6



Product Description

Ultramid HMG13 HS BK-102 is a 63% glass reinforced, injection molding, high modulus nylon designed to have high strength and stiffness for metal replacement applications. It also has excellent moldability and outstanding surface appearance.

Applications

Potential applications are mirror brackets, fuel lids, gas-assisted steering wheel inserts, ski bindings and bike rack clamps.

PHYSICAL	ASTM Test Method	Property Value	
Specific Gravity	D-792	1.74	
Mold Shrinkage (1/8" bar, in/in)		0.002	
MECHANICAL	ASTM Test Method	Dry	Conditioned
Tensile Strength, Break, MPa (psi)	D-638		
23C (73F)		207 (30,000)	-
Elongation, Break, %	D-638		
23C (73F)		3	-
Flexural Modulus, MPa (psi)	D-790		
23C (73F)		17,300 (2,510,000)	-
Flexural Strength, MPa (psi)	D-790		
23C (73F)		378 (54,800)	-
IMPACT	ASTM Test Method	Dry	Conditioned
Notched Izod Impact, J/M (ft-lbs/in)	D-256		
23C (73F)		155 (2.9)	-
THERMAL	ASTM Test Method	Dry	Conditioned
Melting Point, C(F)	D-3418	220 (428)	-
Heat Deflection @ 264 psi (1.8 MPa) C(F)	D-648	213 (415)	-
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		105	
Electrical, C		130	

Processing Guidelines

Material Handling

Max. Water content: 0.03%

Although Product is supplied in sealed containers, drying is recommended in applications requiring optimum surface aesthetics. A dehumidifying or desiccant dryer operating at 80 degC (176 degF) is recommended. Drying time is dependent on moisture level, but 2-4 hours is generally sufficient. 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 300-320 degC (572-608 degF)



BASF Corporation
Engineering Plastics
609 Biddle Avenue
Ypsilanti, MI 48192



Mold Temperature 80-95 degC (176-203 degF)
Injection and Packing Pressure 35-125 bar (500-1500 psi)
Rear Zone 275-300 degC (527-572 degF)
Center Zone 285-310 degC (545-590 degF)
Front Zone 300-325 degC (572-617 degF)
Nozzle 300-325 degC (572-617 degF)

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 required.

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. Recommended to minimize glass fiber 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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BASF Corporation
Engineering Plastics
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Yandotte, MI 48192

