

Ultramid® TG3S BK-104

Polyamide 6

Product Description

Ultramid TG3S BK-104 is a 15% glass reinforced, heat stabilized, impact modified PA6 injection molding compound developed for applications requiring improved toughness in combination with a balance of strength, stiffness, excellent moldability and surface aesthetics.

Applications

It is generally recommended for application such as window hardware, wheel chairs wheels, bicycle wheels, power tool housings, hose clamps, clips and fasteners.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm	1183	1.21	
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23C		4,600	-
Tensile stress at break, MPa	527		
23C		90	-
Tensile strain at break, %	527		
23C		3.5	-
Flexural Modulus, MPa	178		
23C		4,390	-
IMPACT	ISO Test Method	Dry	Conditioned
Izod Notched Impact, kJ/m ²	180		
23C		17	-
-40C		5.4	-
Charpy Notched, kJ/m ²	179		
23C		13	-
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, C	3146	220	-
HDT A, C	75	180	-
HDT B, C	75	211	-
UL RATINGS	UL Test Method	Property Value	
Flammability Rating, 1.5mm	UL94	HB	
Relative Temperature Index, 1.5mm	UL746B		
Mechanical w/o Impact, C		65	
Mechanical w/ Impact, C		65	
Electrical, C		65	



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 (500-1800psi)
Rear Zone 245-275 degC (473-527 degF)
Center Zone 260-285 degC (500-545 degC)
Front Zone 270-295 degC (518-563 degF)
Nozzle 270-295 degC (518-563 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.

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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