

Ultramid® BU50I

Polyamide 6

Product Description

Ultramid Ultratough Nylon BU50I is an unreinforced PA6, impact modified injection molding product that maintains its impact strength and ductility to -40 deg F (-40 deg C). The extreme low temperature tolerance of Ultratough Nylon BU50I makes it ideal for applications in which the weldline impact strength at low temperatures is critical.

Applications

Ultramid BU50I is generally recommended for automotive components, small engines, power tool parts and casings, cold weather and high impact supports gear, such as snowboards, ski components, helmets and hockey masks. For applications requiring painting please refer to the

PHYSICAL	ASTM Test Method	Property Value	
Specific Gravity	D-792	1.06	
Mold Shrinkage (1/8" bar, in/in)		0.018	
Moisture, %	D-570		
(50% RH)		2.1	
(Saturation)		7.3	
MECHANICAL	ASTM Test Method	Dry	Conditioned
Tensile Strength, Yield, MPa (psi)	D-638		
23C (73F)		50 (7,250)	-
Tensile Strength, Break, MPa (psi)	D-638		
23C (73F)		45 (6,520)	-
Elongation, Yield, %	D-638		
23C (73F)		5	-
Elongation, Break, %	D-638		
23C (73F)		>100	-
Flexural Modulus, MPa (psi)	D-790		
23C (73F)		1,690 (245,000)	-
Flexural Strength, MPa (psi)	D-790		
23C (73F)		65 (9,430)	-
IMPACT	ASTM Test Method	Dry	Conditioned
Notched Izod Impact, J/M (ft-lbs/in)	D-256		
-40C (-40F)		NB	-
23C (73F)		NB	-
Drop Weight Impact, ft-lbs, 23C	BASF Drop Weight Impact Test	195	-
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	50 (122)	-
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	



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 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 270-300 degC (518-572 degF)

Mold Temperature 60-85 degC (140-185 degF)

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

Mold Temperatures

A mold temperature of 60-85 degC (140-185 degF) is recommended, but temperatures of 10-85 degC (50-185 degF) 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.

Fill Rate

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Injection speeds of one inch of ram travel per second are typical.

Note

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