Product Information

Ultramid® BU50I
Polyamide 6

BASF The Chemical Company

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	ISO Test Method	Property Value	
Density, g/cm	1183	1.06	
Moisture, %	62		
(50% RH)		2.1	
(Saturation)		7.3	
MECHANICAL	**ISO Test Method**	**Dry**	**Conditioned**
Tensile Modulus, MPa	527		
23C		1,600	510
Tensile stress at yield, MPa	527		
23C		45	27
Tensile strain at yield, %	527		
23C		4	42
Nominal strain at break, %	527		
23C		40	>50
Flexural Strength, MPa	178		
23C		50	15
Flexural Modulus, MPa	178		
23C		1,550	460
IMPACT	**ISO Test Method**	**Dry**	**Conditioned**
Charpy Notched, kJ/m^2	179		
23C		95	-
Charpy Unnotched, kJ/m^2	179		
23C		N	-
THERMAL	**ISO Test Method**	**Dry**	**Conditioned**
Melting Point, C	3146	220	-
HDT A, C	75	50	-
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	

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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