

Ultramid® A3Z HP UN **Polyamide 66**



Product Description

Ultramid A3Z HP UN is an unreinforced, impact modified, heat stabilized, high flow PA66 injection molding grade. Ultramid A3Z HP UN offers a unique combination of maximum toughness and impact resistance with excellent high flow processability.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm ³	1183	1.07	
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23C		1,900	1,060
Tensile stress at yield, MPa	527		
23C		50	-
Tensile strain at yield, %	527		
23C		5	-
Nominal strain at break, %	527		
23C		45	>50
Flexural Modulus, MPa	178		
23C		1,800	880
IMPACT	ISO Test Method	Dry	Conditioned
Izod Notched Impact, kJ/m ²	180		
-40C		23	18
23C		80	99
Charpy Notched, kJ/m ²	179		
-30C		28	19
23C		90	113
Charpy Unnotched, kJ/m ²	179		
-30C		N	N
23C		N	N
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, C	3146	260	-
HDT A, C	75	64	-
HDT B, C	75	170	-
UL RATINGS	UL Test Method	Property Value	
Flammability Rating, 0.75mm	UL94	HB	
Relative Temperature Index, 0.75mm	UL746B		
Mechanical w/o Impact, C		110	
Mechanical w/ Impact, C		105	
Electrical, C		140	
Flammability Rating, 3.0mm	UL94	HB	
Relative Temperature Index, 3.0mm	UL746B		
Mechanical w/o Impact, C		110	
Mechanical w/ Impact, C		105	

Processing Guidelines

Material Handling

Nylon 66 materials must be properly dried in order to provide parts with optimum strength and toughness. Nylon 66 materials are hygroscopic and will become degraded by excessive moisture during the injection molding process. For unopened bag/box, dry at 60C (140F) for 1-2 hours. For material exposed to the atmosphere, if additional drying is needed, dry at 66C (150F) or until the moisture level is between 0.04 - 0.20%.

Typical Profile

Melt Temperature: 288-305C (550-581F)

Mold Temperature: 60-100C (140-212F)

Injection Pressure: 35-125 MPa (5000-18000 psi)

Back Pressure: 0-0.35 MPa (0-50 psi)

Screw RPM 40-80

Screw Compression Ratio:3:1-4:1

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 60-100C (140-212F) is recommended.

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.

Note

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