Product Information

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Ultramid® A3L HP
Polyamide 66

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Product Description

Ultramid A3L HP is an unreinforced, heat stabilized, impact modified, high flow, nylon 66 for injection molding. This grade has excellent flow and improved ambient and low temperature toughness.

Applications

Typical applications include fasteners and clamps.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm³	1183	1.10	
MECHANICAL	**ISO Test Method**	**Dry**	**Conditioned**
Tensile Modulus, MPa	527		
23C		2,440	-
Tensile stress at yield, MPa	527		
23C		63.5	-
Tensile strain at yield, %	527		
23C		6.2	-
Tensile strain at break, %	527		
23C		28	-
Flexural Modulus, MPa	178		
23C		2,280	-
IMPACT	**ISO Test Method**	**Dry**	**Conditioned**
Izod Notched Impact, kJ/m²	180		
-40C		12	-
23C		18	-
Charpy Notched, kJ/m²	179		
-30C		14	-
23C		19	-
THERMAL	**ISO Test Method**	**Dry**	**Conditioned**
Melting Point, C	3146	260	-
HDT A, C	75	70	-
HDT B, C	75	192	-
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	
Electrical, C		140	

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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 prCess. 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