Ultramid® A3L HP BK20465

Polyamide 66

Ultramid A3L HP BK20465 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		
23°C		2,440	1,370
Tensile stress at yield, MPa	527		
23°C		63	44
Tensile stress at break, MPa	527		
23°C		49	41
Tensile strain at yield, %	527		
23°C		6.2	25
Nominal strain at break, %	527		
23°C		28	>50
Flexural Strength, MPa	178		
23°C		85	45
Flexural Modulus, MPa	178		
23°C		2,280	1,150
IMPACT	**ISO Test Method**	**Dry**	**Conditioned**

Izod Notched Impact, kJ/m^2	180		
-40°C		12	9.4
23°C		18	29
Charpy Notched, kJ/m^2	179		
-30°C		14	11
23°C		19	28
Charpy Unnotched, kJ/m^2	179		
-30°C		NB	NB
23°C		NB	NB

THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, °C	3146	260	-
HDT A, ° C	75	70	-
HDT B, ° C	75	196	-

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

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 60°C (140°F) for 1-2 hours. For material exposed to the atmosphere, if additional drying is needed, dry at 66°C (150°F) or until the moisture level is between 0.04 - 0.20%.

Typical Profile
Melt Temperature: 288-305°C (550-581°F)
Mold Temperature: 60-100°C (140-212°F)
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 60-100°C (140-212°F) 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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