Ultramid® A3L HP

BASF Corporation - Polyamide 66

Monday, November 4, 2019

General Information

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.

General			
Material Status	• Commercial: Active		
Availability	• North America		
Additive	• Heat Stabilizer	• Impact Modifier	
Features	• Heat Stabilized • High Flow	• Impact Modified • Low Temperature Toughness	• Oil Resistant
Uses	• Fasteners		
Agency Ratings	• EC 1907/2006 (REACH)		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• FORD WSK-M4D706-A • FORD WSS-M4D706-B1	• GM GMP.PA66.015 Color: Black • GM GMP.PA66.015 Color: Natural	• GM GMW16447P-PA66-T2 Color: Natural • GM GMW16558P-PA66-T1 Color: Natural
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	1.10	g/cm³	ISO 1183
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (73°F)	354000	psi	ISO 527-2
Tensile Stress (Yield, 73°F)	9210	psi	ISO 527-2
Tensile Strain (Yield, 73°F)	6.2	%	ISO 527-2
Nominal Tensile Strain at Break (73°F)	28	%	ISO 527-2
Flexural Modulus (73°F)	331000	psi	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			ISO 179
-22°F	6.7	ft·lb/in²	
73°F	9.0	ft·lb/in²	
Notched Izod Impact Strength			ISO 180
-40°F	5.7	ft·lb/in²	
73°F	8.6	ft·lb/in²	
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature (66 psi, Unannealed)	378	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	158	°F	ISO 75-2/A
Melting Temperature (DSC)	500	°F	ISO 3146

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Thermal	Nominal Value	Unit	Test Method
RTI Elec			UL 746
0.030 in	284	°F	
0.12 in	284	°F	
RTI Imp			UL 746
0.030 in	221	°F	
0.12 in	221	°F	
RTI Str			UL 746
0.030 in	230	°F	
0.12 in	230	°F	

Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.030 in	HB		
0.12 in	HB		

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	140	°F
Drying Time	1.0 to 2.0	hr
Suggested Max Moisture	0.040 to 0.20	%
Processing (Melt) Temp	550 to 581	°F
Mold Temperature	140 to 212	°F
Injection Pressure	508 to 1810	psi
Injection Rate	Fast	
Back Pressure	0.00 to 50.8	psi
Screw Speed	40 to 80	rpm
Screw Compression Ratio	3.0:1.0 to 4.0:1.0	

Notes

[1] Typical properties: these are not to be construed as specifications.