

# Ultramid® A3HG6 HR BK23591

## Polyamide 66

### Product Description

Ultramid A3HG6 HR BK23591 is a 30% glass reinforced, pigmented black, injection molding PA66 grade. It offers good resistance to hydrolysis.

### Applications

Typical applications include automotive radiator mounting frame.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm <sup>3</sup>	1183	1.37	
Moisture, %	62		
(50% RH)		1.7	
(Saturation)		5.5	
RHEOLOGICAL	ISO Test Method	Dry	Conditioned
Melt Volume Rate (275 °C/5 Kg), cc/10min.	1133	25	-
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23°C		10,000	6,800
Tensile stress at break, MPa	527		
-40°C		240	231
23°C		190	120
Tensile strain at break, %	527		
-40°C		3.1	3.0
23°C		3.2	5.4
Flexural Strength, MPa	178		
23°C		275	200
Flexural Modulus, MPa	178		
23°C		8,700	5,800
Ball Indentation, MPa	2039-1	225	175
IMPACT	ISO Test Method	Dry	Conditioned
Izod Notched Impact, kJ/m <sup>2</sup>	180		
-30°C		9	-
23°C		13	20
Charpy Notched, kJ/m <sup>2</sup>	179		
-30°C		9	-
23°C		11	16
Charpy Unnotched, kJ/m <sup>2</sup>	179		
-30°C		65	-
23°C		80	90
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, °C	3146	260	-
HDT A, °C	75	250	-
HDT B, °C	75	250	-
Coef. of Linear Thermal Expansion, Parallel, mm/mm °C		0.25 X10 <sup>-4</sup>	-
Coef. of Linear Thermal Expansion, Normal, mm/mm °C		0.65 X10 <sup>-4</sup>	-
ELECTRICAL	ISO Test Method	Dry	Conditioned
Volume Resistivity (Ohm)	IEC 60093	1E13	1E10
Dielectric Constant (1 MHz)	IEC 60250	3.5	5.6
Dissipation Factor (100 Hz)	IEC 60250	140	2,300
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	

### 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°C (176°F) is recommended. Drying time is dependent on moisture level, However 2-4 hours is generally sufficient. Recommended moisture levels for achieving optimum surface qualities and mechanical properties is 0.05% - 0.12%. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF representative.

#### Typical Profile

Melt Temperature 280-305°C (536-581°F)

Mold Temperature 80-90°C (176-194°F)

Injection and Packing Pressure 35-125 bar (500-1500 psi)

**Mold Temperatures**

A mold temperature of 80-90°C (176-194°F) is recommended, however temperatures of as low as 45°C (113°F) and as high as 105°C (221°F) 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.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas. Minimal back pressure should be utilized to prevent glass breakage.

**Fill Rate**

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate.

**Note**

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