

## Ultramid® A3EG6 Polyamide 66

Ultramid A3EG6 is a 30% glass fiber reinforced injection molding PA66 grade for machinery components and housings of high stiffness and dimensional stability.

### Applications

Typical applications include such as lamp socket housings, cooling fans, insulating profiles for aluminium window frames, and electrical insulation parts.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm <sup>3</sup>	1183	1.36	
<b>Moisture, %</b>	62		
(50% RH)		1.7	
(Saturation)		5.5	
RHEOLOGICAL	ISO Test Method	Dry	Conditioned
Melt Volume Rate (275 °C/5 Kg), cc/10min.	1133	40	-
MECHANICAL	ISO Test Method	Dry	Conditioned
<b>Tensile Modulus, MPa</b>	527		
23 °C		10,000	7,200
<b>Tensile stress at break, MPa</b>	527		
-40 °C		238	227
23 °C		190	130
<b>Tensile strain at break, %</b>	527		
-40 °C		3.2	3.0
23 °C		3.0	5.0
<b>Flexural Strength, MPa</b>	178		
23 °C		280	210

<b>Flexural Modulus, MPa</b>	178		
23°C		8,600	6,500
<b>IMPACT</b>	<b>ISO Test Method</b>	<b>Dry</b>	<b>Conditioned</b>
<b>Charpy Notched, kJ/m<sup>2</sup></b>	179		
-30°C		11	-
23°C		13	22
<b>Charpy Unnotched, kJ/m<sup>2</sup></b>	179		
-30°C		70	-
23°C		85	100
<b>THERMAL</b>	<b>ISO Test Method</b>	<b>Dry</b>	<b>Conditioned</b>
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>	-
<b>ELECTRICAL</b>	<b>ISO Test Method</b>	<b>Dry</b>	<b>Conditioned</b>
Comparative Tracking Index	IEC 60112	550	550
Volume Resistivity (Ohm-m)	IEC 60093	1E13	1E10
Dielectric Constant (1 MHz)	IEC 60250	3.5	5.6
Dissipation Factor (100 Hz), E-4	IEC 60250	140	2,300
Dissipation Factor (1 MHz), E-4	IEC 60250	140	1,600
<b>UL RATINGS</b>	<b>UL Test Method</b>	<b>Property Value</b>	
<b>Relative Temperature Index, 0.75mm</b>	UL746B		
Electrical, °C		120	
Flammability Rating, 1.5mm	UL94	HB	
<b>Relative Temperature Index, 1.5mm</b>	UL746B		

Mechanical w/o Impact, °C		130
Mechanical w/ Impact, °C		120
Electrical, °C		120
Flammability Rating, 3.0mm	UL94	HB
<b>Relative Temperature Index, 3.0mm</b>	UL746B	
Mechanical w/o Impact, °C		130
Mechanical w/ Impact, °C		120
Electrical, °C		120
Flammability Rating, 6.0mm	UL94	HB
<b>Relative Temperature Index, 6.0mm</b>	UL746B	
Mechanical w/o Impact, °C		130
Mechanical w/ Impact, °C		120
Electrical, °C		120

## Processing Guidelines

### Material Handling

Max. Water content: 0.15%

Material is supplied in sealed containers and drying prior to molding in a dehumidifying or desiccant dryer is recommended. Drying parameters are dependent upon the actual percentage of moisture in the pellets and typical pre-drying conditions are 2-4 hours at 180F (83C). Further information concerning safe handling procedures can be obtained from the Safety Data Sheet (MSDS), or by contacting 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.

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## Note

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### **Technical Assistance**

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### **Web address**

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