Product Information

Ultramid® A3HG7
Polyamide 66

BASF
The Chemical Company

Product Description

Ultramid A3HG7 is a 35% glass fiber reinforced injection molding PA66 grade.

Applications

Typical applications include machinery components and housings of high stiffness and dimensional stability such as gears, solenoid valve housings, electrical flow heaters, trailing cable attachments, as well as electrically insulating parts.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm	1183	1.41	
Moisture, %	62		
(50% RH)		1.6	
(Saturation)		5	
RHEOLOGICAL	**ISO Test Method**	**Dry**	**Conditioned**
Melt Volume Rate (275 C/- Kg), cc/10min.	1133	40	-
MECHANICAL	**ISO Test Method**	**Dry**	**Conditioned**
Tensile Modulus, MPa	527		
23C		11,500	8,500
Tensile stress at break, MPa	527		
23C		210	150
Tensile strain at break, %	527		
23C		3	5
Flexural Modulus, MPa	178		
23C		10,000	-
IMPACT	**ISO Test Method**	**Dry**	**Conditioned**
Charpy Notched, kJ/m^2	179		
23C		13	22
-30C		12	-
Charpy Unnotched, kJ/m^2	179		
23C		95	105
-30C		75	-
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		0.17 X10-4	-
Coef. of Linear Thermal Expansion, Normal, mm/mm C		0.65 X10-4	-
ELECTRICAL	**ISO Test Method**	**Dry**	**Conditioned**
Comparative Tracking Index	IEC 60112	550	550
Volume Resistivity	IEC 60093	1E15	1E10
Dielectric Constant (1 MHz)	IEC 60250	3.5	5.7

Dissipation Factor (100 Hz)	IEC 60250	200	3,000
Dissipation Factor (1 MHz)	IEC 60250	200	1,500

UL RATINGS	UL Test Method	Property Value
Flammability Rating, 1.5mm	UL94	HB
Relative Temperature Index, 1.5mm	UL746B	
Mechanical w/o Impact, C		130
Mechanical w/ Impact, C		120
Electrical, C		120

Processing Guidelines

Material Handling
Max. Water content: 0.12%
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 degC (176 degF) is recommended. Drying time is dependent on moisture level, but 2-4 hours is generally sufficient. Further information concerning safe handling procedures can be obtained from the Material Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile
Melt Temperature 280-305 degC (536-581 degF)
Mold Temperature 80-90 degC (176-194 degF)
Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures
A mold temperature of 80-90 degC (176-194 degF) is recommended, but temperatures of as low as 45 degC (113 degF) and as high as 105 degC (221 degF) 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.