Product Information
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Ultramid® A3WG5
Polyamide 66

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Product Description

Ultramid A3WG5 is a 25% glass fiber reinforced and heat resistance injection molding PA66 grade.

Applications

Typical applications include machinery components and housings of high stiffness and dimensional stability such as coil formers and bearing cages. A3EG5 and A3HG5 are the preferred grades for producing electrically insulating parts.

PHYSICAL	ASTM Test Method	Property Value	
Specific Gravity	D-792	1.32	
Mold Shrinkage (1/8" bar, in/in)		0.003	
Moisture, %	D-570		
(50% RH)		1.9	
(Saturation)		6	
MECHANICAL	**ASTM Test Method**	**Dry**	**Conditioned**
Tensile Strength, Break, MPa (psi)	D-638		
23°C (73°F)		169 (24,500)	118 (17,100)
Elongation, Break, %	D-638		
23°C (73°F)		2.8	5
Flexural Modulus, MPa (psi)	D-790		
23°C (73°F)		7,720 (1,120,000)	5,380 (780,000)
IMPACT	**ASTM Test Method**	**Dry**	**Conditioned**
Notched Izod Impact, J/M (ft-lbs/in)	D-256		
-40°C (-40°F)		69 (1.3)	-
23°C (73°F)		80 (1.5)	-
THERMAL	**ASTM Test Method**	**Dry**	**Conditioned**
Melting Point, °C(°F)	D-3418	260 (500)	-
Heat Deflection @ 264 psi (1.8 MPa) °C(°F)	D-648	250 (482)	-
Heat Deflection @ 66 psi (.45 MPa) °C(°F)	D-648	250 (482)	-
Coef. of Linear Thermal Expansion, mm/mm °C (in/in °F)	E-831	0.1 X10-4	-
UL RATINGS	**UL Test Method**	**Property Value**	
Flammability Rating, 0.71mm	UL94	HB	
Relative Temperature Index, 0.71mm	UL746B		
Electrical, °C		125	
Flammability Rating, 1.5mm	UL94	HB	
Relative Temperature Index, 1.5mm	UL746B		
Mechanical w/o Impact, °C		115	
Mechanical w/ Impact, °C		120	
Electrical, °C		125	
Flammability Rating, 3.0mm	UL94	HB	
Relative Temperature Index, 3.0mm	UL746B		
Mechanical w/o Impact, °C		130	
Mechanical w/ Impact, °C		125	
Electrical, °C		125	
ELECTRICAL	**ASTM Test Method**	**Dry**	**Conditioned**
Volume Resistivity, 1.5 mm	D-257	1E13	1E10

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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