

Product Information

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Ultramid® A3X2G5 Polyamide 66


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Product Description

Ultramid A3X2G5 is a 25% glass fiber reinforced injection molding PA66 grade with improved flame retardance and enhanced long-term performance. Flame retardant based on red phosphorus; outstanding mechanical and electrical properties.

PHYSICAL	ASTM Test Method	Property Value	
Specific Gravity	D-792	1.34	
Mold Shrinkage (1/8" bar, in/in)		0.005	
Moisture, %	D-570		
(50% RH)		1.4	
(Saturation)		6	
MECHANICAL	ASTM Test Method	Dry	Conditioned
Tensile Strength, Break, MPa (psi)	D-638		
23°C (73°F)		138 (20,000)	-
Elongation, Break, %	D-638		
23°C (73°F)		3	-
Flexural Modulus, MPa (psi)	D-790		
23°C (73°F)		7,100 (1,030,000)	-
IMPACT	ASTM Test Method	Dry	Conditioned
Notched Izod Impact, J/M (ft-lbs/in)	D-256		
-40°C (-40°F)		64 (1.2)	-
23°C (73°F)		75 (1.4)	-
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	238 (460)	-
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	0.2 X10-4	-
UL RATINGS	UL Test Method	Property Value	
Flammability Rating, 0.6mm	UL94	HB	
Relative Temperature Index, 0.6mm	UL746B		
Mechanical w/ Impact, °C		115	
Electrical, °C		110	
Flammability Rating, 0.81mm	UL94	V-0	
Relative Temperature Index, 0.81mm	UL746B		
Mechanical w/o Impact, °C		130	
Mechanical w/ Impact, °C		115	
Electrical, °C		120	
Flammability Rating, 1.5mm	UL94	V-0	
Relative Temperature Index, 1.5mm	UL746B		
Mechanical w/o Impact, °C		130	
Mechanical w/ Impact, °C		115	
Electrical, °C		120	
Flammability Rating, 3.0mm	UL94	V-0	
Relative Temperature Index, 3.0mm	UL746B		
Mechanical w/o Impact, °C		130	
Mechanical w/ Impact, °C		115	
Electrical, °C		120	
ELECTRICAL	ASTM Test Method	Dry	Conditioned
Volume Resistivity, 1.5 mm	D-257	1E13	1E10

Processing Guidelines
Material Handling

Max. Water content: 0.05%

Special handling and safety precautions must be used when processing this grade of material. Please contact your BASF Technical Service Representative for details. Product is supplied in moisture barrier packaging. However, further drying is typically required. 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. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF Technical Service representative.

Typical Profile

Melt Temperature 285-300°C (545-572°F)

Mold Temperature 80-90°C (176-194°F)

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

Mold Temperatures

This product can be processed over a wide range of mold temperatures; however, for applications where aesthetics are critical, a mold surface temperature of 80-95°C (176-203°F) is required.

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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