Product Information

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Ultramid® A3X2G7

Polyamide 66

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Product Description

Ultramid A3X2G7 is a 35% glass fiber reinforced injection molding PA66 grade with improved flame retardance and enhanced long-term stability. Flame retardant based on red phosphorus; very high stiffness and strength; outstanding mechanical and electrical properties.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm³	1183	1.45	
Mold Shrinkage, parallel, %	294-4	0.34	
Mold Shrinkage, normal, %	294-4	1.14	
Moisture, %	62		
(50% RH)		1.0-1.4	
(Saturation)		4.4-5.0	
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		11,000	8,500
Tensile stress at break, MPa	527		
23°C		160	120
Tensile strain at break, %	527		
23°C		3.0	4.0
Flexural Modulus, MPa	178		
23°C		9,200	-
IMPACT	**ISO Test Method**	**Dry**	**Conditioned**
Izod Notched Impact, kJ/m^2	180		
23°C		13	20
Charpy Notched, kJ/m^2	179		
-30°C		10	-
23°C		14	18
Charpy Unnotched, kJ/m^2	179		
-30°C		65	-
23°C		70	70
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	600	-
Volume Resistivity (Ohm)	IEC 60093	1E13	1E10
Dielectric Constant (1 MHz)	IEC 60250	3.6	5
Dissipation Factor (1 MHz)	IEC 60250	200	2,000
Dielectric Strength, KV/mm	IEC 60243-1	33	30
UL RATINGS	**UL Test Method**	**Property Value**	
Relative Temperature Index, 0.4mm	UL746B		
Mechanical w/ Impact, °C		115	
Electrical, °C		110	
Flammability Rating, 0.75mm	UL94	V-0	
Relative Temperature Index, 0.75mm	UL746B		
Mechanical w/o Impact, °C		130	
Mechanical w/ Impact, °C		115	
Electrical, °C		115	
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		115	
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		115	

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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