

Ultramid® A3X2G5

Polyamide 66



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	ISO Test Method	Property Value	
Density, g/cm ³	1183	1.34	
Moisture, %	62		
(50% RH)		1.4	
(Saturation)		6	
RHEOLOGICAL	ISO Test Method	Dry	Conditioned
Melt Volume Rate (275 C/5 Kg), cc/10min.	1133	40	-
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23C		8,500	6,000
Tensile stress at break, MPa	527		
-40C		196	-
23C		140	100
Tensile strain at break, %	527		
-40C		3.5	-
23C		3.0	4.5
IMPACT	ISO Test Method	Dry	Conditioned
Charpy Notched, kJ/m ²	179		
-30C		10	-
23C		13	17
Charpy Unnotched, kJ/m ²	179		
-30C		60	65
23C		65	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		0.3 X10 ⁻⁴	-
Coef. of Linear Thermal Expansion, Normal, mm/mm C		0.7 X10 ⁻⁴	-
ELECTRICAL	ISO Test Method	Dry	Conditioned
Comparative Tracking Index	IEC 60112	550	550
Volume Resistivity (Ohm-m)	IEC 60093	1E13	1E10
Dielectric Constant (1 MHz)	IEC 60250	3.7	5
Dissipation Factor (1 MHz), E-4	IEC 60250	200	1,000
Dielectric Strength, KV/mm	IEC 60243-1	33	30
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

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 80C (176F) 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 285-300C (545-572F)

Mold Temperature 80-90C (176-194F)

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 80-95C (176-203F) 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

Although all statements and information in this publication are believed to be accurate and reliable, they are presented gratis and for guidance only, and risks and liability for results obtained by use of the products or application of the suggestions described are assumed by the user. NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH. Statements or suggestions concerning possible use of the products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that toxicity data and safety measures are indicated or that other measures may not be required.