

Ultramid® A3X3G5

Polyamide 66

BASF Corporation

Message:

A glass fibre reinforced injection moulding grade with an improved flame retardance based on red phosphorus, giving for parts requiring strength and high stiffness; outstanding electrical properties. UL94-V0/3,2mm.

General Information				
UL YellowCard		E41871-233752		
Filler / Reinforcement		Glass fiber reinforced material, 25% filler by weight		
Additive		Flame retardancy		
Features		Rigidity, high		
		Good electrical performance		
		Good strength		
		Oil resistance		
		Flame retardancy		
Agency Ratings		EC 1907/2006 (REACH)		
RoHS Compliance		RoHS compliance		
Forms		Particle		
Processing Method		Injection molding		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.34	--	g/cm ³	ISO 1183
Apparent Density	0.70	--	g/cm ³	
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	40.0	--	cm ³ /10min	ISO 1133
Water Absorption				ISO 62
Saturated, 23°C	5.7 - 6.3	--	%	ISO 62
Equilibrium, 23°C, 50% RH	1.2 - 1.6	--	%	ISO 62
Viscosity Number (96% H2SO4)	140	--	cm ³ /g	ISO 307
Mold Shrinkage - constrained ¹	0.50	--	%	
Temperature index-at 50% loss of tensile strength				IEC 60216
-- ²	135	--	°C	IEC 60216
-- ³	153	--	°C	IEC 60216
Maximum operating temperature-short cycle operation	220	--	°C	
Automotive Materials (> 1.00 mm)	Passed	--		FMVSS 302

Polymer Abbreviation	PA66-GF25 FR	--		
Screw Speed			mm/sec	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	8500	6000	MPa	ISO 527-2
Tensile Stress (Break)	140	100	MPa	ISO 527-2
Tensile Strain (Break)	3.0	4.5	%	ISO 527-2
Tensile Creep Modulus ⁴ (1000 hr)	--	3500	MPa	ISO 899-1
Flexural Modulus	7100	--	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength (23°C)	13	18	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	65	--	kJ/m ²	ISO 179/1eU
23°C	70	75	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	11	17	kJ/m ²	ISO 180/A
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, not annealed	250	--	°C	ISO 75-2/B
1.8 MPa, not annealed	250	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
Linear thermal expansion coefficient				ISO 11359-2
Flow: 23 to 80°C	2.5E-5 - 3.5E-5	--	cm/cm/°C	ISO 11359-2
Lateral: 23 to 80°C	6.0E-5 - 8.0E-5	--	cm/cm/°C	ISO 11359-2
Specific Heat	1500	--	J/kg/°C	
Thermal Conductivity	0.33	--	W/m/K	DIN 52612
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	--	1.0E+10	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Dielectric Strength ⁵	33	30	kV/mm	IEC 60243-1
Relative Permittivity (1 MHz)	3.70	5.00		IEC 60250
Dissipation Factor (1 MHz)	0.020	0.10		IEC 60250
Comparative Tracking Index (Solution A)	575	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating (1.60 mm)	V-1	--		UL 94
Injection	Dry	Unit		
Drying Temperature	80.0		°C	
Drying Time	4.0		hr	
Suggested Max Moisture	0.15		%	

Hopper Temperature	80.0	°C
Rear Temperature	290	°C
Middle Temperature	290	°C
Front Temperature	290	°C
Nozzle Temperature	290	°C
Processing (Melt) Temp	280 - 300	°C
Mold Temperature	80.0 - 90.0	°C

Injection instructions

Residence Time : <10 min

NOTE

1.	Test box with central gating, dimensions of base (107*47*1,5) mm, processing condition: TM = 320°C (unreinforced) or 330°C (reinforced), TW = 80°C
2.	20000 h
3.	5000 h
4.	strain <= 0.5%, 23°C
5.	60*60*1 mm ³

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