

Ultramid® A3EG10

Polyamide 66

BASF Corporation

Message:

A Glass fibre reinforced injection moulding grade for industrial parts requiring high rigidity and providing electrical insulation.

General Information				
UL YellowCard	E36632-531617	E41871-233727		
Filler / Reinforcement	Glass fiber reinforced material, 50% filler by weight			
Features	Rigidity, high			
	Oil resistance			
Uses	Electronic insulation			
	Industrial components			
Agency Ratings	EC 1907/2006 (REACH)			
RoHS Compliance	RoHS compliance			
Forms	Particle			
Processing Method	Injection molding			
Multi-Point Data	Creep Modulus vs. Time (ISO 11403-1)			
	Isochronous Stress vs. Strain (ISO 11403-1)			
	Isothermal Stress vs. Strain (ISO 11403-1)			
	Secant Modulus vs. Strain (ISO 11403-1)			
	Shear Modulus vs. Temperature (ISO 11403-1)			
	Viscosity vs. Shear Rate (ISO 11403-2)			
Physical	Dry	Conditioned	Unit	Test Method
Density	1.56	--	g/cm ³	ISO 1183
Apparent Density	0.70	--	g/cm ³	
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	8.00	--	cm ³ /10min	ISO 1133
Molding Shrinkage				ISO 294-4
Vertical flow direction	0.82	--	%	ISO 294-4
Flow direction	0.33	--	%	ISO 294-4
Water Absorption				ISO 62
Saturated, 23°C	3.7 - 4.3	--	%	ISO 62
Equilibrium, 23°C, 50% RH	1.0 - 1.4	--	%	ISO 62
Viscosity Number (96% H2SO4)	130	--	cm ³ /g	ISO 307

Mold Shrinkage - constrained ¹	0.45	--	%	
Temperature index-at 50% loss of tensile strength				IEC 60216
-- ²	135	--	°C	IEC 60216
-- ³	165	--	°C	IEC 60216
Maximum operating temperature-short cycle operation	240	--	°C	
Automotive Materials (> 1.00 mm)	Passed	--		FMVSS 302
Polymer Abbreviation	PA66-GF50	--		
Screw Speed			mm/sec	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	16800	12500	MPa	ISO 527-2
Tensile Stress (Break)	240	180	MPa	ISO 527-2
Tensile Strain (Break)	2.5	3.5	%	ISO 527-2
Tensile Creep Modulus ⁴ (1000 hr)	--	7800	MPa	ISO 899-1
Flexural Modulus	15000	13500	MPa	ISO 178
Flexural Stress	360	300	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	13	--	kJ/m ²	ISO 179/1eA
23°C	18	25	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	90	--	kJ/m ²	ISO 179/1eU
23°C	95	100	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	13	15	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	5.0E-6 - 2.0E-5	--	cm/cm/°C	ISO 11359-2
Lateral: 23 to 80°C	5.0E-5 - 6.0E-5	--	cm/cm/°C	ISO 11359-2
Specific Heat	1300	--	J/kg/°C	
Thermal Conductivity	0.37	--	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
Relative Permittivity (1 MHz)	3.80	6.60		IEC 60250
Dissipation Factor (1 MHz)	0.015	0.17		IEC 60250
Comparative Tracking Index (Solution A)	550	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating (1.60 mm)	HB	--		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	300		°C	
Middle Temperature	300		°C	
Front Temperature	300		°C	
Nozzle Temperature	300		°C	
Processing (Melt) Temp	280 - 310		°C	
Mold Temperature	80.0 - 90.0		°C	
Injection instructions				
Residence Time : <10 min				
NOTE				

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|----|--|
| 1. | Test box with central gating, dimensions of base (107*47*1,5) mm, processing conditions: TM = 290°C, TW = 80°C |
| 2. | 20000 h |
| 3. | 5000 h |
| 4. | strain <= 0.5%, 23°C |

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