

Ultramid® A3WG3

Polyamide 66

BASF Corporation

Message:

Glass fibre reinforced and heat aging resistance injection moulding grade for machine components and housings of medium stiffness.

General Information			
UL YellowCard	E36632-531630	E41871-233743	E41871-101468832
Filler / Reinforcement	Glass Fiber, 15% Filler by Weight		
Features	Good Heat Aging Resistance		
	Good Stiffness		
	Oil Resistant		
Uses	Housings		
Agency Ratings	EC 1907/2006 (REACH)		
RoHS Compliance	RoHS Compliant		
Forms	Pellets		
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)		
	Viscosity vs. Shear Rate (ISO 11403-2)		

Physical	Dry	Conditioned	Unit	Test Method
Density	1.23	--	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	60.0	--	cm ³ /10min	ISO 1133
Water Absorption				ISO 62
Saturation, 23°C	6.7 to 7.3	--	%	
Equilibrium, 23°C, 50% RH	1.9 to 2.5	--	%	
Viscosity Number (96% H ₂ SO ₄ (Sulphuric Acid))	145	--	cm ³ /g	ISO 307
Mold Shrinkage - constrained ¹	0.61	--	%	
Maximum Service Temperature - short cycle operation	240	--	°C	
Temperature Index - at 50% loss of tensile strength				IEC 60216
-- ²	145	--	°C	

-- ³	175	--	°C	
Automotive Materials (> 1.00 mm)	Pass	--		FMVSS 302
Screw Speed	< 300		mm/sec	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	6000	4500	MPa	ISO 527-2
Tensile Stress (Break)	130	85.0	MPa	ISO 527-2
Tensile Strain (Break)	3.0	10	%	ISO 527-2
Tensile Creep Modulus ⁴ (1000 hr)	--	2600	MPa	ISO 899-1
Flexural Modulus	5500	4000	MPa	ISO 178
Flexural Stress	200	125	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	7.0	--	kJ/m ²	
23°C	8.0	11	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	43	--	kJ/m ²	
23°C	45	70	kJ/m ²	
Notched Izod Impact Strength (23°C)	5.5	6.5	kJ/m ²	ISO 180/A
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	250	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	240	--	°C	ISO 75-2/A
Melting Temperature	260	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 80°C	3.0E-5 to 3.5E-5	3.0E-5 to 3.5E-5	cm/cm/°C	
Transverse : 23 to 80°C	7.0E-5 to 8.0E-5	7.0E-5 to 8.0E-5	cm/cm/°C	
Specific Heat	1800	--	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
Relative Permittivity (1 MHz)	3.50	5.50		IEC 60250
Dissipation Factor (1 MHz)	0.014	0.30		IEC 60250
Comparative Tracking Index (Solution A)	450	--	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	290	°C
Middle Temperature	290	°C
Front Temperature	290	°C
Nozzle Temperature	290	°C
Processing (Melt) Temp	280 to 300	°C
Mold Temperature	80.0 to 90.0	°C

NOTE

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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