



Ultramid® A3WG10

BASF Corporation - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Ultramid A3WG10 is a 50% glass fiber reinforced and heat aging resistance injection molding PA66 grade.

Applications

Typical applications include industrial articles having very high rigidity.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight		
Features	• Heat Aging Resistant	• High Rigidity	• Oil Resistant
Uses	• Industrial Applications		
Agency Ratings	• EC 1907/2006 (REACH)		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• FORD WSK-M4D596-A	• GM GMW3038P-PA66-GF50H Color: Black	• GM GMW3038P-PA66-GF50H Color: Natural
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density / Specific Gravity	1.55	--		ASTM D792
Density	1.55	--	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR)				ISO 1133
275°C/5.0 kg	20	--	cm ³ /10min	
Molding Shrinkage - Flow (0.125 in)	1.0E-3	--	in/in	
Water Absorption (Saturation)	4.0	--	%	ASTM D570
Water Absorption				ISO 62
Saturation, 73°F	4.0	--	%	
Water Absorption				ASTM D570
Equilibrium, 50% RH	1.2	--	%	
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	1.2	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	2.44E+6	1.81E+6	psi	ISO 527-2
Tensile Strength (Break, 73°F)	33400	--	psi	ASTM D638
Tensile Stress				ISO 527-2
Break, 73°F	33400	26100	psi	
Break, 176°F	21900	16400	psi	
Tensile Elongation (Break, 73°F)	2.0	--	%	ASTM D638
Tensile Strain				ISO 527-2
Break, 73°F	2.5	3.5	%	
Break, 176°F	5.2	4.9	%	
Flexural Modulus (73°F)	1.70E+6	--	psi	ASTM D790

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Mechanical	Dry	Conditioned	Unit	Test Method
Flexural Modulus (73°F)	2.18E+6	--	psi	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-22°F	6.2	--	ft·lb/in ²	
73°F	8.6	12	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179
-22°F	40	--	ft·lb/in ²	
73°F	45	48	ft·lb/in ²	
Notched Izod Impact				ASTM D256
-40°F	1.9	--	ft·lb/in	
73°F	2.5	--	ft·lb/in	
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				ASTM D648
66 psi, Unannealed	482	--	°F	
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	482	--	°F	
Deflection Temperature Under Load				ASTM D648
264 psi, Unannealed	482	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	482	--	°F	
Peak Melting Temperature	500	--	°F	ASTM D3418
Melting Temperature (DSC)	500	--	°F	ISO 3146
CLTE - Flow	3.9E-6	--	in/in/°F	ASTM E831
CLTE - Flow	7.2E-6	--	in/in/°F	
CLTE - Transverse	3.1E-5	--	in/in/°F	
RTI Elec				UL 746
0.031 in	257	--	°F	
0.06 in	257	--	°F	
0.12 in	257	--	°F	
RTI Imp				UL 746
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Str				UL 746
0.06 in	266	--	°F	
0.12 in	266	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0591 in)	1.0E+15	1.0E+12	ohms·cm	ASTM D257
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Dielectric Constant (1 MHz)	3.80	6.60		IEC 60250
Dissipation Factor				IEC 60250
100 Hz	0.015	0.17		
1 MHz	0.015	0.30		
Comparative Tracking Index	450	450	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.031 in	HB	--		
0.06 in	HB	--		
0.12 in	HB	--		

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Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.15	%
Processing (Melt) Temp	536 to 581	°F
Mold Temperature	176 to 194	°F
Injection Pressure	500 to 1500	psi
Injection Rate	Fast	

Notes

¹ Typical properties: these are not to be construed as specifications.