

Ultramid® A3WG5

Polyamide 66

BASF Corporation

Message:

Ultramid A3WG5 is a 25% glass fiber reinforced and heat resistance injection molding PA66 grade.

Applications

Typical applications include machinery components and housings of high stiffness and dimensional stability such as coil formers and bearing cages.

A3EG5 and A3HG5 are the preferred grades for producing electrically insulating parts.

General Information				
UL YellowCard	E36632-531631	E41871-233744	E41871-101468833	
Filler / Reinforcement	Glass Fiber,25% Filler by Weight			
Features	Good Dimensional Stability			
	High Stiffness			
	Medium Heat Resistance			
	Oil Resistant			
Uses	Housings			
	Machine/Mechanical Parts			
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)			
	Shear Modulus vs. Temperature (ISO 11403-1)			
	Viscosity vs. Shear Rate (ISO 11403-2)			
Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity	1.32	--	g/cm ³	ASTM D792, ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	50.0	--	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.18 mm)	0.30	--	%	
Water Absorption				
Saturation	6.0	--	%	ASTM D570
Saturation, 23°C	6.0	--	%	ISO 62
Equilibrium, 50% RH	1.9	--	%	ASTM D570

Equilibrium, 23°C, 50% RH	1.9	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	8600	6500	MPa	ISO 527-2
Tensile Strength				
Break, 23°C	169	118	MPa	ASTM D638
Break, 23°C	180	120	MPa	ISO 527-2
Tensile Elongation				
Break, 23°C	2.8	5.0	%	ASTM D638
Break, 23°C	2.8	6.0	%	ISO 527-2
Flexural Modulus				
23°C	7720	5380	MPa	ASTM D790
23°C	7600	--	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-30°C	9.0	--	kJ/m ²	
23°C	10	20	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179
-30°C	55	--	kJ/m ²	
23°C	60	90	kJ/m ²	
Notched Izod Impact				
-40°C	69	--	J/m	ASTM D256
23°C	80	--	J/m	ASTM D256
23°C	9.5	--	kJ/m ²	ISO 180
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	250	--	°C	ASTM D648, ISO 75-2/B
1.8 MPa, Unannealed	250	--	°C	ASTM D648, ISO 75-2/A
Peak Melting Temperature	260	--	°C	ASTM D3418, ISO 3146
CLTE				
Flow	1.0E-5	--	cm/cm/°C	ASTM E831
Flow	3.0E-5	--	cm/cm/°C	
Transverse	6.5E-5	--	cm/cm/°C	
RTI Elec				UL 746
0.710 mm	125	--	°C	
1.50 mm	125	--	°C	
3.00 mm	125	--	°C	
RTI Imp				UL 746
1.50 mm	120	--	°C	
3.00 mm	125	--	°C	

RTI Str				UL 746
1.50 mm	115	--	°C	
3.00 mm	130	--	°C	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity				
1.50 mm	1.0E+13	1.0E+10	ohms·cm	ASTM D257
--	1.0E+13	1.0E+10	ohms·cm	IEC 60093
Dielectric Constant (1 MHz)	3.50	5.50		IEC 60250
Dissipation Factor				IEC 60250
100 Hz	0.014	0.30		
1 MHz	0.014	0.30		
Comparative Tracking Index	450	450	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.710 mm	HB	--		
1.50 mm	HB	--		
3.00 mm	HB	--		
Injection	Dry	Unit		
Drying Temperature	80.0		°C	
Drying Time	2.0 to 4.0		hr	
Suggested Max Moisture	0.15		%	
Processing (Melt) Temp	280 to 305		°C	
Mold Temperature	80.0 to 90.0		°C	
Injection Pressure	3.50 to 12.5		MPa	
Injection Rate	Fast			

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