

Ultramid® A3WG7

Polyamide 66

BASF Corporation

Message:

Ultramid A3WG7 is a 35% glass fiber reinforced and heat resistance injection molding PA66 grade for machinery for industrial items.

Applications

Typical applications include gear wheels, solenoid valve housings, cable attachments, automotive fuel distributors and components for automotive gear shift.

General Information				
UL YellowCard		E36632-531633	E41871-233746	E41871-101468836
Filler / Reinforcement		Glass Fiber,35% Filler by Weight		
Additive		Heat Stabilizer		
Features		Good Dimensional Stability		
		Good Flow		
		Good Thermal Aging Resistance		
		Heat Stabilized		
		High Rigidity		
		Low Viscosity		
Uses		Oil Resistant		
		Automotive Applications		
		Gears		
		Housings		
Agency Ratings		EC 1907/2006 (REACH)		
RoHS Compliance		RoHS Compliant		
Appearance		Natural Color		
Forms		Pellets		
Processing Method		Injection Molding		
Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity	1.41	--	g/cm ³	ASTM D792, ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	40.0	--	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.18 mm)	0.50	--	%	
Water Absorption				
Saturation	5.0	--	%	ASTM D570
Saturation, 23°C	5.0	--	%	ISO 62
Equilibrium, 50% RH	1.6	--	%	ASTM D570
Equilibrium, 23°C, 50% RH	1.6	--	%	ISO 62

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	11500	8500	MPa	ISO 527-2
Tensile Strength				
Break, 23°C	217	--	MPa	ASTM D638
Break, 23°C	210	150	MPa	ISO 527-2
Break, 80°C	125	93.0	MPa	ISO 527-2
Break, 121°C	102	77.0	MPa	ISO 527-2
Tensile Elongation				
Break, 23°C	3.0	--	%	ASTM D638
Break, 23°C	3.0	5.0	%	ISO 527-2
Flexural Modulus				
23°C	10700	--	MPa	ASTM D790
23°C	10000	8480	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-30°C	12	--	kJ/m ²	
23°C	14	22	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179
-30°C	75	--	kJ/m ²	
23°C	95	110	kJ/m ²	
Notched Izod Impact				
-40°C	91	--	J/m	ASTM D256
23°C	120	--	J/m	ASTM D256
23°C	14	--	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	1.7E-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	115	--	°C	
3.00 mm	120	--	°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+11	ohms·cm	ASTM D257
--	1.0E+13	1.0E+11	ohms·cm	IEC 60093
Dielectric Constant (1 MHz)	3.50	5.70		IEC 60250
Dissipation Factor				IEC 60250
100 Hz	0.020	0.30		
1 MHz	0.020	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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