

Ultramid® A3HG5

Polyamide 66

BASF Corporation

Message:

Ultramid A3HG5 is a 25% glass fiber reinforced injection molding PA66 grade.

Applications

Typical applications include machinery components and housings of high stiffness and dimensional stability.

General Information				
UL YellowCard		E36632-531624	E41871-233734	
Filler / Reinforcement		Glass Fiber,25% Filler by Weight		
Features		Good Dimensional Stability		
		High Stiffness		
		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/cm³	ASTM D792, ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	50.0	--	cm³/10min	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	179	--	MPa	ASTM D638
Break, -40°C	196	186	MPa	ISO 527-2
Break, 23°C	170	120	MPa	ISO 527-2
Tensile Elongation				
Break, 23°C	3.0	--	%	ASTM D638
Break, 23°C	3.0	6.0	%	ISO 527-2
Flexural Modulus				
23°C	7930	--	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	18	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179
-30°C	55	--	kJ/m ²	
23°C	65	90	kJ/m ²	
Notched Izod Impact				
-40°C	53	--	J/m	ASTM D256
23°C	96	--	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
0.800 mm	130	--	°C	
1.50 mm	130	--	°C	
3.00 mm	130	--	°C	
RTI Imp				UL 746
1.50 mm	120	--	°C	
3.00 mm	120	--	°C	
RTI Str				UL 746
1.50 mm	130	--	°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	0.16		
Comparative Tracking Index	550	550	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.800 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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