Ultramid® A3EG3

BASF Corporation - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Ultramid A3EG3 is a 15% glass fiber reinforced injection molding PA66 grade.

Applications
Typical applications include medium stiffness machinery components and housings, as well as electrically insulating parts.

General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific	• North America
Filler / Reinforcement	• Glass Fiber, 15% Filler by Weight	
Features	• Good Stiffness	• Oil Resistant
Uses	• Electrical Parts • Electronic Insulation	• Housings • Machine/Mechanical Parts
Agency Ratings	• EC 1907/2006 (REACH)	
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• CHRYSLER MS-DB-41 CPN3794 Color: Color As Noted On Drawing • SAE J1639 • SAE J1639 PA1112 Color: Black • SAE J1639 PA1112 Color: Natural	
Forms	• Pellets	
Processing Method	• Injection Molding	

ASTM & ISO Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density / Specific Gravity	1.24	--		ASTM D792
Density	1.24	--	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR)				ISO 1133
275°C/5.0 kg	70	--	cm³/10min	
Molding Shrinkage - Flow (0.125 in)	5.5E-3	--	in/in	
Water Absorption (Saturation)	7.0	--	%	ASTM D570
Water Absorption				ISO 62
Saturation, 73°F	7.0	--	%	
Water Absorption				ASTM D570
Equilibrium, 50% RH	2.2	--	%	
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.2	--	%	
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (73°F)	870000	653000	psi	ISO 527-2
Tensile Strength (Break, 73°F)	16500	--	psi	ASTM D638
Tensile Stress				ISO 527-2
Break, -40°F	22600	--	psi	
Break, 73°F	18900	12300	psi	
Tensile Elongation (Break, 73°F)	3.0	--	%	ASTM D638

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Strain				ISO 527-2
Break, -40°F	2.6	--	%	
Break, 73°F	3.0	10	%	
Flexural Modulus (73°F)	750000	--	psi	ASTM D790
Flexural Modulus (73°F)	754000	580000	psi	ISO 178
Flexural Stress (73°F)	26100	18100	psi	ISO 178
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179
-22°F	3.3	--	ft·lb/in²	
73°F	3.8	5.2	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179
-22°F	20	--	ft·lb/in²	
73°F	21	33	ft·lb/in²	
Notched Izod Impact				ASTM D256
-40°F	0.99	--	ft·lb/in	
73°F	1.1	--	ft·lb/in	
Notched Izod Impact Strength				ISO 180
73°F	2.6	6.7	ft·lb/in²	
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	1.1E-5	--	in/in/°F	ASTM E831
CLTE - Flow	1.8E-5	--	in/in/°F	
CLTE - Transverse	4.2E-5	--	in/in/°F	
RTI Elec				UL 746
0.031 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Imp				UL 746
0.06 in	257	--	°F	
0.12 in	257	--	°F	
RTI Str				UL 746
0.06 in	257	--	°F	
0.12 in	257	--	°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)	3.50	5.50		IEC 60250

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Electrical	Dry	Conditioned	Unit	Test Method
Dissipation Factor				IEC 60250
100 Hz	0.014	0.30		
1 MHz	0.023	0.16		
Comparative Tracking Index	550	550	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	--		

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	508 to 1810	psi
Injection Rate	Fast	

Notes

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