Ultramid® B3ZG6

BASF Corporation - Polyamide 6

Monday, November 4, 2019

General Information

Product Description

Ultramid B3ZG6 is an impact-modified, 30% glass fiber reinforced injection molding PA6 grade for industrial items having very high impact strength and rigidity.

Applications
Typical applications include automotive airbag housings and half-shells for suitcases.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight		
Additive	• Impact Modifier		
Features	• High Rigidity • Impact Modified	• Oil Resistant • Ultra High Impact Resistance	
Uses	• Automotive Applications • Housings	• Industrial Applications • Luggage	
Agency Ratings	• EC 1907/2006 (REACH)		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• GM GMW15702-435123 PA6-GF30		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density / Specific Gravity	1.33	--		ASTM D792
Density	1.33	--	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR)				ISO 1133
275°C/5.0 kg	25	--	cm³/10min	
Molding Shrinkage - Flow (0.125 in)	3.0E-3	--	in/in	
Water Absorption (Saturation)	6.2	--	%	ASTM D570
Water Absorption				ISO 62
Saturation, 73°F	6.2	--	%	
Water Absorption				ASTM D570
Equilibrium, 50% RH	2.0	--	%	
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.0	--	%	
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (73°F)	1.31E+6	769000	psi	ISO 527-2
Tensile Strength (Break, 73°F)	20000	--	psi	ASTM D638
Tensile Stress (Break, 73°F)	21800	14500	psi	ISO 527-2
Tensile Elongation (Break, 73°F)	3.6	--	%	ASTM D638
Tensile Strain (Break, 73°F)	3.6	10	%	ISO 527-2
Flexural Modulus (73°F)	1.14E+6	--	psi	ASTM D790
Flexural Modulus (73°F)	1.07E+6	682000	psi	ISO 178

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Mechanical	Dry	Conditioned	Unit	Test Method
Flexural Stress (73°F)	31900	--	psi	ISO 178
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179
-22°F	7.1	--	ft·lb/in²	
73°F	9.5	17	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179
-22°F	43	--	ft·lb/in²	
73°F	45	52	ft·lb/in²	
Notched Izod Impact				ASTM D256
-40°F	2.6	--	ft·lb/in	
73°F	3.6	--	ft·lb/in	
Notched Izod Impact Strength				ISO 180
-22°F	4.8	--	ft·lb/in²	
73°F	9.5	15	ft·lb/in²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load				ASTM D648
66 psi, Unannealed	428	--	°F	
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	428	--	°F	
Deflection Temperature Under Load				ASTM D648
264 psi, Unannealed	405	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	392	--	°F	
Peak Melting Temperature	428	--	°F	ASTM D3418
Melting Temperature (DSC)	428	--	°F	ISO 3146
CLTE - Flow	5.6E-6	--	in/in/°F	ASTM E831
CLTE - Flow	1.3E-5	--	in/in/°F	
CLTE - Transverse	3.6E-5	--	in/in/°F	
RTI Elec				UL 746
0.029 in	302	--	°F	
0.06 in	302	--	°F	
0.12 in	302	--	°F	
RTI Imp				UL 746
0.029 in	239	--	°F	
0.06 in	239	--	°F	
0.12 in	248	--	°F	
RTI Str				UL 746
0.029 in	302	--	°F	
0.06 in	302	--	°F	
0.12 in	302	--	°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	6.80		IEC 60250
Dissipation Factor (1 MHz)	0.020	0.20		IEC 60250

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Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.029 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	0.080	%
Rear Temperature	473 to 527	°F
Middle Temperature	500 to 545	°F
Front Temperature	518 to 563	°F
Nozzle Temperature	518 to 563	°F
Processing (Melt) Temp	518 to 563	°F
Mold Temperature	176 to 203	°F
Injection Pressure	508 to 1810	psi
Injection Rate	Fast	

Notes

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