



Ultramid® A3WGM53 BK20560

BASF Corporation - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Ultramid A3WGM53 BK20560 is a 40% glass/mineral reinforced, pigmented black, injection molding grade for high stiffness parts with good dimensional stability and surface finish.

Applications

Typical applications include automotive cylinder-head cover.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Filler / Reinforcement	• Glass/Mineral, 40% Filler by Weight
Features	• Good Dimensional Stability • High Stiffness • Good Surface Finish • Oil Resistant
Uses	• Automotive Under the Hood
Agency Ratings	• EC 1907/2006 (REACH)
RoHS Compliance	• RoHS Compliant
Automotive Specifications	• FORD WSS-M4D823-A2 • GM • FORD WSS-M4D823-B1 • GM GMW8751P-PA66-M15GF25 Color: Black
Appearance	• Black
Forms	• Pellets
Processing Method	• Injection Molding

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.48	--	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR)				ISO 1133
275°C/5.0 kg	30	--	cm ³ /10min	
Water Absorption				ISO 62
Saturation, 73°F	5.1	--	%	
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	1.4	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	1.75E+6	885000	psi	ISO 527-2
Tensile Stress (Break, 73°F)	23200	11600	psi	ISO 527-2
Tensile Strain (Break, 73°F)	2.3	6.0	%	ISO 527-2
Flexural Modulus (73°F)	1.46E+6	798000	psi	ISO 178
Flexural Stress (73°F)	32600	18100	psi	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-22°F	3.2	--	ft·lb/in ²	
73°F	3.8	7.6	ft·lb/in ²	

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Impact	Dry	Conditioned	Unit	Test Method
Charpy Unnotched Impact Strength				ISO 179
-22°F	24	--	ft·lb/in ²	
73°F	26	30	ft·lb/in ²	
Notched Izod Impact Strength				ISO 180
-22°F	3.6	--	ft·lb/in ²	
73°F	4.5	7.6	ft·lb/in ²	
Hardness	Dry	Conditioned	Unit	Test Method
Ball Indentation Hardness	33400	13100	psi	ISO 2039-1
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	482	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	437	--	°F	
Melting Temperature (DSC)	500	--	°F	ISO 3146
CLTE - Flow	8.3E-6	--	in/in/°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Dielectric Constant (1 MHz)	4.00	--		IEC 60250

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.