

Product Information

Oct 2016

Ultramid® A3WGM53 BK20560 Polyamide 66


[Email PDF Datasheet](#) | [Print/Save Version](#)
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.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm³	1183	1.48	
Moisture, %	62		
(50% RH)		1.4	
(Saturation)		5.1	
RHEOLOGICAL	ISO Test Method	Dry	Conditioned
Melt Volume Rate (275 °C/5 Kg), cc/10min.	1133	30	-
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23°C		12,100	6,100
Tensile stress at break, MPa	527		
23°C		160	80
Tensile strain at break, %	527		
23°C		2.3	6.0
Flexural Strength, MPa	178		
23°C		225	125
Flexural Modulus, MPa	178		
23°C		10,100	5,500
Ball Indentation, MPa	2039-1	230	90
IMPACT	ISO Test Method	Dry	Conditioned
Izod Notched Impact, kJ/m²	180		
-30°C		7.5	-
23°C		9.5	16
Charpy Notched, kJ/m²	179		
-30°C		6.7	-
23°C		8	16
Charpy Unnotched, kJ/m²	179		
-30°C		50	-
23°C		55	62
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, °C	3146	260	-
HDT A, °C	75	225	-
HDT B, °C	75	250	-
Coef. of Linear Thermal Expansion, Parallel, mm/mm °C		0.15 X10-4	-
ELECTRICAL	ISO Test Method	Dry	Conditioned
Volume Resistivity (Ohm)	IEC 60093	1E13	1E10
Dielectric Constant (1 MHz)	IEC 60250	4	-

Processing Guidelines
Material Handling

Max. Water content: 0.15%

Product is supplied in sealed containers and drying prior to molding is not required. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 80°C (176°F) is recommended. Drying time is dependent on moisture level, However 2-4 hours is generally sufficient. Recommended moisture levels for achieving optimum surface qualities and mechanical properties is 0.05% - 0.12%. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile

Melt Temperature 280-305°C (536-581°F)

Mold Temperature 80-90°C (176-194°F)

Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures

A mold temperature of 80-90°C (176-194°F) is recommended, however temperatures of as low as 45°C (113°F) and as high as 105°C (221°F) can be used where applicable.

Pressures

Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas. Minimal back pressure should be utilized to prevent glass breakage.

Fill Rate

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate.

Note

Although all statements and information in this publication are believed to be accurate and reliable, they are presented gratis and for guidance only, and risks and liability for results obtained by use of the products or application of the suggestions described are assumed by the user. NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH. Statements or suggestions concerning possible use of the products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that toxicity data and safety measures are indicated or that other measures may not be required.

BASF Corporation
Engineering Plastics
1609 Biddle Avenue
Wyandotte, MI 48192

General Information: 800-BC-RESIN
Technical Assistance: 800-527-TECH (734-324-5150)
Web address: <http://www.plasticsportal.com/usa>

