Product Information

Jul 2014

Ultramid® A3WG6 BK00564 Polyamide 66



Email PDF Datasheet | Print/Save Version

Product Description

Ultramid A3WG6 BK00564 is a 30% glass fiber reinforced, pigmented black and heat resistance injection molding PA66 grade for machinery components and housings of high stiffness and dimensional stability. A3EG6 is the preferred grade for producing electrically insulating parts.

Applications

Typical applications include lamp socket housings, cooling fans, insulating profiles for aluminum window frames, water containers for automotive cooling systems.

Moisture, % 62 (50% RH) 1.7 (50% RH) 5.5 MECHANIOAL ISO Test Method Dry Conditioned Tensile stress at break, MPa 527 Total Tressile stress at break, MPa 527 Conditioned Tensile strain at break, % 527 2.6 - 23°C 2.6 - - Flexural Modulus, MPa 178 - 23°C 8,730 - Leaver at Modulus, MPa 178 - 23°C 8,730 - MPACT ISO Test Method Dry Conditioned Local Notched Impact, k.l/m² 180 - 23°C 8.5 - Properties 5.5 - HERRMAL ISO Test Method Dry Conditioned Melaing Point, °C 3146 260 - PIDT A, °C 75 250 - UL RATINGS UL Test Method Property Value Electrical, °C 125 <tr< th=""><th>PHYSICAL</th><th>ISO Test Method</th><th colspan="2">Property Value</th></tr<>	PHYSICAL	ISO Test Method	Property Value	
(50% RH) 1.7 (Saturation) 5.5 MECHANICAL ISO Test Method Dry Conditioned Tensile stress at break, MPa 527 179 - 23°C 179 - - Tensile strain at break, % 527 2.6 - 23°C 2.6 - - Flexural Modulus, MPa 178 - - 23°C 8,730 - - PMPACT ISO Test Method Dry Conditioned 23°C 8.5 - - 23°C 8.5 - - 23°C 8.5 - - 23°C 8.5 - - 1HERMAL ISO Test Method Dry Conditioned Melting Point, **C 3146 260 - - HDT A, **C 75 250 - - - - - - - - - - - - - -<	Density, g/cm³	1183	1.36	
(Saturation) 5.5 MECHANICAL ISO Test Method Dry Conditioned Tensile stress at break, MPa 527 179 - 23°C 179 -	Moisture, %	62		
ISO Test Method Dry Conditioned	(50% RH)		1.7	
Tensile stress at break, MPa 527 23°C 179 - Tensile strain at break, % 527 23°C 2.6 - Flexural Modulus, MPa 178 2.6 - 23°C 8,730 - - MPACT ISO Test Method Dy Conditioned MPACT ISO Test Method Dry Conditioned 23°C 8.5 - - THERMAL ISO Test Method Dry Conditioned Welting Point, °C 3146 260 - - THERMAL ISO Test Method Dry Conditioned Welting Point, °C 3146 260 - - THERMAL ISO Test Method Dry Conditioned Welting Point, °C 3146 260 - - LIFE ATMINGS UL Test Method Property Value - Eleative Temperature Index, 0.71mm UL 746 HB Relative Temperature Index, 1.5mm UL 746B HB	(Saturation)		5.5	
23°C 179 - Tensile strain at break, % 527 2.6 - 23°C 2.6 - Tescural Modulus, MPa 178 - 23°C 8,730 - MPACT ISO Test Method Dry Conditioned 200 Notched Impact, kJ/m² 180 - - 23°C 8.5 - - THERMAL ISO Test Method Dry Conditioned Metling Point, "C 3146 260 - HDT A, "C 75 250 - JLR ATINGS UL Test Method Property Value Felammability Rating, 0.71mm UL94 HB Relative Temperature Index, 0.71mm UL94 HB Relative Temperature Index, 0.71mm UL94 HB Relative Temperature Index, 1.5mm UL94 HB Relative Temperature Index, 1.5mm UL746B 115 Mechanical w/ Impact, "C 115 115 Electrical, "C 115 115	MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile strain at break, % 527 23°C 2.6 - Flexural Modulus, MPa 178 - 23°C 8,730 - MPACT ISO Test Method Dry Conditioned 23°C 8.5 - 23°C 8.5 - THERMAL ISO Test Method Dry Conditioned Mething Point, "C 3146 260 - HDT A, "C 75 250 - LEARNINGS UL Test Method Property Value Elammability Rating, 0.71mm UL.94 HB Relative Temperature Index, 0.71mm UL.746B HB Relative Temperature Index, 1.5mm UL.94 HB Relative Temperature Index, 1.5mm UL.746B HB Mechanical w/ Impact, "C 115 Electrical, "C 115 Electrical, "C 115 Electrical, "C 115 Electrical, "C 125 Electrical, "C 125 Flammability Rating, 3.0mm UL.94 HB HB	Tensile stress at break, MPa	527		
23°C 2.6 - Flexural Modulus, MPa 178 - 23°C 8.730 - MPACT ISO Test Method Dry Conditioned Izod Notched Impact, kJ/m² 180 - - 23°C 8.5 - - THERMAL ISO Test Method Dry Conditioned Welting Point, "C 3146 260 - HDT A, "C 75 250 - UL RATINGS UL Test Method Property Value Elammability Rating, 0.71mm UL.94 HB Relative Temperature Index, 0.71mm UL.746B HB Electrical, "C 125 - Flammability Rating, 1.5mm UL.746B HB Relative Temperature Index, 1.5mm UL.746B HB Mechanical w/ Impact, "C 115 Electrical, "C 115 Mechanical w/ Impact, "C 115 Electrical, "C 125 Flammability Rating, 3.0mm UL.94B HB HB Relative Temperature	23°C		179	-
Secural Modulus, MPa	Tensile strain at break, %	527		
180	23°C		2.6	-
MPACT ISO Test Method Dry Conditioned 23°C 8.5 - THERMAL ISO Test Method Dry Conditioned Melting Point, °C 3146 260 - HDT A, °C 75 250 - LUL RATINGS UL Test Method Property Value Flammability Rating, 0.71mm UL.94 HB Relative Temperature Index, 0.71mm UL.94 HB Relative Temperature Index, 1.5mm UL.746B HB Relative Temperature Index, 1.5mm UL.746B 115 Mechanical Wo Impact, °C 115 115 Mechanical wo Impact, °C 125 115 Flammability Rating, 3.0mm UL.94 HB Relative Temperature Index, 3.0mm UL.94 HB Relative Temperature Index, °C 125 125 Flammability Rating, 3.0mm UL.94 HB Relative Temperature Index, 3.0mm UL.746B HB Relative Temperature Index, 3.0mm UL.746B HB	Flexural Modulus, MPa	178		
Zag C Notiched Impact, kJ/m² 180 23°C NTERMAL ISO Test Method Dry Conditioned Melting Point, °C 3146 260 - HDT A, °C 75 250 - UL RATINGS UL 194 HB Flammability Rating, 0.71mm UL 94 HB Relative Temperature Index, 0.71mm UL 94 HB Relative Temperature Index, 1.5mm UL 746B HB Relative Temperature Index, 1.5mm UL 746B HB Mechanical Wo Impact, °C 115 Electrical, °C 115 Electrical, °C 115 Electrical, °C 115 Flammability Rating, 3.0mm UL 94 HB Relative Temperature Index, 3.0mm UL 94 HB Relative Temperature Index, °C 125 Index (Part of the Part o	23°C		8,730	-
23°C 8.5 - THERMAL ISO Test Method Dry Conditioned Melting Point, °C 3146 260 - HDT A, °C 75 250 - JURATINGS UL Test Method Property Value Flammability Rating, 0.71mm UL.94 HB Relative Temperature Index, 0.71mm UL.746B HB Relative Temperature Index, 1.5mm UL.94 HB Relative Temperature Index, 1.5mm UL.746B 115 Mechanical W/o Impact, °C 115 15 Mechanical w/ Impact, °C 125 14 Flammability Rating, 3.0mm UL.94 HB Relative Temperature Index, 3.0mm UL.746B HB Relative Temperature Index, 3.0mm UL.746B HB Mechanical W/o Impact, °C 130 Mechanical W/o Impact, °C 130	IMPACT	ISO Test Method	Dry	Conditioned
SO Test Method Dry Conditioned Mething Point, °C 3146 260	Izod Notched Impact, kJ/m ²	180		
Melting Point, °C 3146 260 - HDT A, °C 75 250 - ULRATINGS UL Test Method Property Value Flammability Rating, 0.71mm UL94 HB Relative Temperature Index, 0.71mm UL746B HB Electrical, °C 125 Flammability Rating, 1.5mm UL94 HB Relative Temperature Index, 1.5mm UL746B Mechanical w/o Impact, °C 115 Electrical, °C 115 Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 130 Mechanical w/ Impact, °C 120	23°C		8.5	-
Melting Point, °C 3146 260 - HDT A, °C 75 250 - ULRATINGS UL Test Method Property Value Flammability Rating, 0.71mm UL94 HB Relative Temperature Index, 0.71mm UL746B HB Electrical, °C 125 Flammability Rating, 1.5mm UL94 HB Relative Temperature Index, 1.5mm UL746B Mechanical w/o Impact, °C 115 Mechanical w/ Impact, °C 115 Electrical, °C 125 Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL94 HB Mechanical w/o Impact, °C 130 HB Mechanical w/o Impact, °C 130 HB	THERMAL	ISO Test Method	Dry	Conditioned
Flammability Rating, 0.71mm UL 746B HB Relative Temperature Index, 0.71mm UL746B 125 Electrical, °C 125 188 Flammability Rating, 1.5mm UL94 HB Relative Temperature Index, 1.5mm UL746B 115 Mechanical w/o Impact, °C 115 115 Mechanical w/ Impact, °C 125 125 Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL746B HB Mechanical w/o Impact, °C 130 130 Mechanical w/ Impact, °C 120 120	Melting Point, °C	3146		-
Flammability Rating, 0.71mm UL94 Relative Temperature Index, 0.71mm UL746B Electrical, °C 125 Flammability Rating, 1.5mm Relative Temperature Index, 1.5mm UL94 HB Relative Temperature Index, 1.5mm UL746B Mechanical w/o Impact, °C 115 Mechanical w/ Impact, °C 115 Electrical, °C 115 Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 120	HDT A, ° C	75	250	-
Relative Temperature Index, 0.71mm UL746B Electrical, °C 125 Flammability Rating, 1.5mm UL94 HB Relative Temperature Index, 1.5mm UL746B Mechanical w/o Impact, °C 115 Mechanical w/ Impact, °C 115 Electrical, °C 125 Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w / Impact, °C 120	UL RATINGS	UL Test Method	Property Value	
Electrical, °C 125 Flammability Rating, 1.5mm UL94 HB Relative Temperature Index, 1.5mm UL746B Mechanical w/o Impact, °C 115 Mechanical w/ Impact, °C 115 Electrical, °C 125 Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 120	Flammability Rating, 0.71mm	UL94		
Flammability Rating, 1.5mm	Relative Temperature Index, 0.71mm	UL746B		
Relative Temperature Index, 1.5mm UL746B Mechanical w/o Impact, °C 115 Mechanical w/ Impact, °C 115 Electrical, °C 125 Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 120	Electrical, °C		125	
Mechanical w/o Impact, °C 115 Mechanical w/ Impact, °C 115 Electrical, °C 125 Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 120	Flammability Rating, 1.5mm	UL94	НВ	
Mechanical w/ Impact, °C 115 Electrical, °C 125 Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 120	Relative Temperature Index, 1.5mm	UL746B		
Electrical, °C Flammability Rating, 3.0mm UL94 HB Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 125	Mechanical w/o Impact, °C		1	15
Flammability Rating, 3.0mm UL94 Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 120	Mechanical w/ Impact, °C		115	
Relative Temperature Index, 3.0mm UL746B Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 120	Electrical, °C		125	
Mechanical w/o Impact, °C 130 Mechanical w/ Impact, °C 120	Flammability Rating, 3.0mm	UL94	I	НВ
Mechanical w/ Impact, °C 120	Relative Temperature Index, 3.0mm	UL746B		
• •	Mechanical w/o Impact, °C		1	30
Floatrical °C	Mechanical w/ Impact, °C		120	
Electrical, C 125	Electrical, °C		1	25

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 degC (176 degF) is recommended. Drying time is dependent on moisture level, but 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 Material Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile

Melt Temperature 280-305 degC (536-581 degF)
Mold Temperature 80-90 degC (176-194 degF)
Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures

A mold temperature of 80-90 degC (176-194 degF) is recommended, but temperatures of as low as 45 degC (113 degF) and as high as 105 degC (221 degF) 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.

ill 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

