

Ultramid® 8231G HS

Polyamide 6



Product Description

Ultramid 8231G HS is a heat stabilized, 15% glass fiber reinforced PA6 injection molding compound. It is also available in non-heat stabilized (Ultramid 8231) and/or pigmented versions. The glass fiber reinforcement enhances performance such as strength, stiffness and heat deflection temperature. The heat stabilizer system extends the properties at elevated temperatures. It also has excellent chemical resistance to greases, oils and hydrocarbons.

Applications

Ultramid 8231G HS is ideally suited for more demanding performance applications such as safety helmet parts, washers, gears, engine and motor parts, chutes, and higher temperature environments.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm	1183	1.23	
Moisture, %	62		
(24 Hour)		1.4	
(50% RH)		2.3	
(Saturation)		8.1	
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
-40C		5,950	6,600
23C		5,960	2,640
80C		2,470	2,300
121C		2,090	1,900
Tensile stress at break, MPa	527		
-40C		160	170
23C		140	80
80C		60	20
121C		50	40
Tensile strain at break, %	527		
23C		4	9
Flexural Strength, MPa	178		
23C		160	65
Flexural Modulus, MPa	178		
23C		4,770	2,210
IMPACT	ISO Test Method	Dry	Conditioned
Izod Notched Impact, kJ/m ²	180		
23C		5	-
Charpy Notched, kJ/m ²	179		
23C		6.5	-
-30C		5.5	-
Charpy Unnotched, kJ/m ²	179		
23C		40	-
THERMAL	ISO Test Method	Dry	Conditioned



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Melting Point, C	3146	220	-
HDT A, C	75	195	-
HDT B, C	75	217	-
Coef. of Linear Thermal Expansion, Parallel, mm/mm C		0.39 X10-4	-
Coef. of Linear Thermal Expansion, Normal, mm/mm C		0.78 X10-4	-

ELECTRICAL	ISO Test Method	Dry	Conditioned
Volume Resistivity	IEC 60093	>1E13	-
Dielectric Constant (100 Hz)	IEC 60250	3.6	-
Dielectric Constant (1 MHz)	IEC 60250	3.4	-
Dissipation Factor (100 Hz)	IEC 60250	100	-
Dissipation Factor (1 MHz)	IEC 60250	200	-
Dielectric Strength, KV/mm	IEC 60243-1	40	-

UL RATINGS	UL Test Method	Property Value
Flammability Rating, 1.5mm	UL94	HB
Relative Temperature Index, 1.5mm	UL746B	
Mechanical w/o Impact, C		105
Mechanical w/ Impact, C		105
Electrical, C		130

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. 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 250-290 degC (482-554 degF)

Mold Temperature 80-95 degC (176-203 degF)

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

Mold Temperatures

This product can be processed over a wide range of mold temperatures; however, for applications where aesthetics are critical, a mold surface temperature of 80-95 degC (176-203 degF) is recommended.

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. Recommended to minimize glass fiber 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.



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Note

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