

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	ASTM Test Method	Property Value	
Specific Gravity	D-792	1.23	
Mold Shrinkage (1/8" bar, in/in)		0.005	
Moisture, %	D-570		
(24 Hour)		1.4	
(50% RH)		2.3	
(Saturation)		8.1	
MECHANICAL	ASTM Test Method	Dry	Conditioned
Tensile Strength, Break, MPa (psi)	D-638		
-40C (-40F)		160 (23,200)	170 (24,600)
23C (73F)		140 (20,300)	79 (11,500)
80C (176F)		60 (8,700)	20 (2,900)
121C (250F)		50 (7,250)	40 (5,800)
Elongation, Break, %	D-638		
-40C (-40F)		3	4
23C (73F)		4	9
80C (176F)		8	15
121C (250F)		7	6
Flexural Modulus, MPa (psi)	D-790		
-40C (-40F)		5,860 (850,000)	6,430 (932,000)
23C (73F)		5,310 (770,000)	2,400 (348,000)
65C (149F)		2,400 (348,000)	-
121C (250F)		1,930 (280,000)	-
Flexural Strength, MPa (psi)	D-790		
-40C (-40F)		214 (31,000)	219 (31,800)
23C (73F)		172 (24,900)	101 (14,600)
65C (149F)		110 (16,000)	-
90C (194F)		90 (13,100)	-
121C (250F)		76 (11,000)	-
Rockwell Hardness, R Scale	D-785	121	-
IMPACT	ASTM Test Method	Dry	Conditioned
Notched Izod Impact, J/M (ft-lbs/in)	D-256		



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23C (73F)		59 (1.1)	-
THERMAL	ASTM Test Method	Dry	Conditioned
Melting Point, C(F)	D-3418	220 (428)	-
Heat Deflection @ 264 psi (1.8 MPa) C(F)	D-648	200 (392)	-
Coef. of Linear Thermal Expansion, mm/mm C (in/in F)	E-831	0.5 X10-4	-
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	
ELECTRICAL	ASTM Test Method	Dry	Conditioned
Volume Resistivity, 1.5 mm	D-257	>1E13	-

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.

Note



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Note

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