

Ultramid® 8233G HS

Polyamide 6



Product Description

Ultramid 8233G HS is a heat stabilized, 33% glass fiber reinforced PA6 injection molding compound offering excellent strength, stiffness, high temperature performance and dimensional stability. It is also available in non-heat stabilized (Ultramid 8233G) and/or pigmented versions.

Applications

Ultramid 8233G HS is generally recommended for applications such as power tool housings, weed trimmer components, gears, automotive housings and under hood applications.

PHYSICAL	ASTM Test Method	Property Value	
Specific Gravity	D-792	1.39	
Mold Shrinkage (1/8" bar, in/in)		0.003	
Moisture, %	D-570		
(24 Hour)		1.1	
(50% RH)		1.8	
(Saturation)		6.4	
MECHANICAL	ASTM Test Method	Dry	Conditioned
Tensile Strength, Break, MPa (psi)	D-638		
-40°C (-40°F)		283 (41,000)	255 (37,000)
23°C (73°F)		195 (28,300)	125 (18,100)
80°C (176°F)		110 (15,900)	80 (11,600)
121°C (250°F)		83 (12,000)	60 (8,700)
Elongation, Break, %	D-638		
-40°C (-40°F)		3.6	3.5
23°C (73°F)		3.5	6
80°C (176°F)		7	6
121°C (250°F)		7	6
Flexural Modulus, MPa (psi)	D-790		
-40°C (-40°F)		9,830 (1,430,000)	10,200 (1,480,000)
23°C (73°F)		9,040 (1,310,000)	5,130 (744,000)
65°C (149°F)		4,020 (583,000)	-
90°C (194°F)		3,750 (544,000)	-
121°C (250°F)		3,320 (481,000)	-
Flexural Strength, MPa (psi)	D-790		
-40°C (-40°F)		380 (55,100)	361 (52,300)
23°C (73°F)		297 (43,100)	179 (26,000)
65°C (149°F)		160 (23,200)	-
90°C (194°F)		140 (20,300)	-
121°C (250°F)		112 (16,200)	-
Rockwell Hardness, R Scale	D-785	121	-
IMPACT	ASTM Test Method	Dry	Conditioned
Notched Izod Impact, J/M (ft-lbs/in)	D-256		

-40°C (-40°F)		107 (2.0)	107 (2.0)
23°C (73°F)		148 (2.8)	235 (4.4)
Drop Weight Impact, ft-lbs, 23°C	BASF Drop Weight Impact Test	3	5
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	210 (410)	-
Heat Deflection @ 66 psi (.45 MPa) °C(°F)	D-648	218 (424)	-
Coef. of Linear Thermal Expansion, mm/mm °C (in/in °F)	E-831	0.38 X10-4	-
UL RATINGS	ASTM Test Method	Dry	Conditioned
Flammability Rating, 1.5mm	UL94	HB	-
Relative Temperature Index, 1.5mm	UL746B		
Mechanical w/o Impact, °C		140	-
Mechanical w/ Impact, °C		115	-
Electrical, °C		140	-
ELECTRICAL	ASTM Test Method	Dry	Conditioned
Volume Resistivity, 1.5 mm	D-257	>1E13	-

Processing Guidelines

Material Handling

Max. Water content: 0.10%

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, 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 270-295 °C (518-563 °F)

Mold Temperature 80-95 °C (176-203 °F)

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 °C (176-203 °F) 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.

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

Note

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