Product Information

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Ultramid® 8233G HS
Polyamide 6

BASF The Chemical Company

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		
-40C (-40F)		283 (41,000)	255 (37,000)
23C (73F)		195 (28,300)	125 (18,100)
80C (176F)		110 (16,000)	80 (11,600)
121C (250F)		83 (12,000)	60 (8,700)
Elongation, Break, %	D-638		
-40C (-40F)		3.6	3.5
23C (73F)		3.5	6
80C (176F)		7	6
121C (250F)		7	6
Flexural Modulus, MPa (psi)	D-790		
-40C (-40F)		9,830 (1,430,000)	10,200 (1,480,000)
23C (73F)		9,040 (1,310,000)	5,130 (744,000)
65C (149F)		4,020 (583,000)	-
90C (194F)		3,750 (544,000)	-
121C (250F)		3,320 (481,000)	-
Flexural Strength, MPa (psi)	D-790		
-40C (-40F)		380 (55,100)	361 (52,300)
23C (73F)		297 (43,100)	179 (26,000)
65C (149F)		160 (23,200)	-
90C (194F)		140 (20,300)	-
121C (250F)		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		
-40C (-40F)		107 (2.0)	107 (2.0)

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23C (73F)		148 (2.8)	235 (4.4)
Drop Weight Impact, ft-lbs, 23C	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	UL Test Method	Property Value
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
Material is supplied in sealed containers and drying prior to molding in a dehumidifying or desiccant dryer is recommended. Drying parameters are dependent upon the actual percentage of moisture in the pellets and typical pre-drying conditions are 2-4 hours at 180F (83C). 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 (MSDS), or by contacting your BASF representative.

Typical Profile
Melt Temperature 270-295 degC (518-563 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.

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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