

# Ultramid® B3GM35 Q643

## Polyamide 6

### Product Description

Ultramid B3GM35 Q643 is a 40% combined glass-fiber and mineral reinforced injection molding PA6 grade.

### Applications

Typical applications include industrial articles requiring medium rigidity and high dimensional stability.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm <sup>3</sup>	1183	1.48	
Moisture, %	62		
(50% RH)		1.7	
(Saturation)		5.7	
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23°C		8,500	-
Tensile stress at break, MPa	527		
23°C		120	-
Tensile strain at break, %	527		
23°C		2.6	-
Flexural Modulus, MPa	178		
23°C		7,500	-
IMPACT	ISO Test Method	Dry	Conditioned
Izod Notched Impact, kJ/m <sup>2</sup>	180		
23°C		5.5	-
Charpy Notched, kJ/m <sup>2</sup>	179		
23°C		4.1	-
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, °C	3146	221	-
HDT A, °C	75	198	-
Coef. of Linear Thermal Expansion, Parallel, mm/mm °C		0.175 X10 <sup>-4</sup>	-
Coef. of Linear Thermal Expansion, Normal, mm/mm °C		1.065 X10 <sup>-4</sup>	-

### Processing Guidelines

#### Material Handling

Max. Water content: 0.15%

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 Safety Data Sheet (MSDS), or by contacting 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

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