

# Ultramid® A3WC4 HP

## Polyamide 66

### Product Description

Ultramid A3WC4 HP is a 20 wt. % short carbon fiber reinforced, heat stabilized, high flow PA66 injection molding grade. The Ultramid A3WC4 HP has excellent mechanical properties and is suitable for large injection molded components.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm <sup>3</sup>	1183	1.22	
RHEOLOGICAL	ISO Test Method	Dry	Conditioned
Melt Volume Rate (275 °C/5 Kg), cc/10min.	1133	38	-
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23°C		19,000	13,900
Tensile stress at break, MPa	527		
23°C		255	185
Tensile strain at break, %	527		
23°C		2.2	3.0
Flexural Strength, MPa	178		
23°C		340	266
Flexural Modulus, MPa	178		
23°C		16,500	12,900
IMPACT	ISO Test Method	Dry	Conditioned
Charpy Notched, kJ/m <sup>2</sup>	179		
-30°C		7	-
23°C		8	7.8
Charpy Unnotched, kJ/m <sup>2</sup>	179		
-30°C		54	47
23°C		60	-
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, °C	3146	260	-
HDT A, °C	75	255	-

### Processing Guidelines

#### Material Handling

Max. Water content: 0.08%

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, however about 4 hours is generally sufficient. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Please contact your BASF representative if you have any questions.

#### Typical Profile

Melt Temperature 285-315°C (545-599°F) Flat profile is best

Mold Temperature 80-95°C (176-203°F)

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

#### Mold Temperatures

A mold temperature of 80-95°C (176-203°F) is recommended, however temperatures of as low as 55°C (131°F) and as high as 105°C (221°F) can be used where applicable.

#### Pressures

Injection pressure controls the filling of the part and should be applied for 95% 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 is recommended to preserve carbon fiber integrity, 3.4-5.2 bar(50-75 psi)

#### Fill Rate

Medium 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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