

# Ultramid® HMG14 HS BK-102

## Polyamide 66



### Product Description

Ultramid HMG14 HS BK-102 is a 60% glass reinforced, injection molding grade of PA66 offering high strength and stiffness. Due to inherently lower moisture absorption, Ultramid HMG14 HS BK-102 shows improved retention of mechanical properties after moisture conditioning. In addition, molded parts possess an exceptional surface finish.

### Applications

Ultramid HMG14 HS BK-102 was designed for applications requiring very high rigidity and should be considered for components that are constructed with metal.

| PHYSICAL                               | ISO Test Method | Property Value |             |
|----------------------------------------|-----------------|----------------|-------------|
| Density, g/cm                          | 1183            | 1.75           |             |
| MECHANICAL                             | ISO Test Method | Dry            | Conditioned |
| Tensile Modulus, MPa                   | 527             |                |             |
| 23C                                    |                 | 20,200         | 20,830      |
| Tensile stress at break, MPa           | 527             |                |             |
| 23C                                    |                 | 248            | 220         |
| Tensile strain at break, %             | 527             |                |             |
| 23C                                    |                 | 2.5            | 2.2         |
| Flexural Strength, MPa                 | 178             |                |             |
| 23C                                    |                 | 383            | 351         |
| Flexural Modulus, MPa                  | 178             |                |             |
| 23C                                    |                 | 18,900         | 19,400      |
| IMPACT                                 | ISO Test Method | Dry            | Conditioned |
| Izod Notched Impact, kJ/m <sup>2</sup> | 180             |                |             |
| 23C                                    |                 | 13             | 13          |
| -40C                                   |                 | 12             | 11          |
| Charpy Notched, kJ/m <sup>2</sup>      | 179             |                |             |
| 23C                                    |                 | 13             | 15          |
| -30C                                   |                 | 12             | 12          |
| Charpy Unnotched, kJ/m <sup>2</sup>    | 179             |                |             |
| 23C                                    |                 | 99             | 93          |
| -30C                                   |                 | 95             | 85          |
| THERMAL                                | ISO Test Method | Dry            | Conditioned |
| Melting Point, C                       | 3146            | 260            | -           |
| HDT A, C                               | 75              | 224            | -           |

### Processing Guidelines

#### Material Handling

Max. Water content: 0.12%

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 280-305 degC (536-581 degF)  
Mold Temperature 80-90 degC (176-194 degF)  
Injection and Packing Pressure 35-125 bar (500-1500 psi)

## Mold Temperatures

A mold temperature of 80-90 degC (176-194 degF) is recommended, but temperatures of as low as 45 degC (113 degF) and as high as 105 degC (221 degF) can be used where applicable.

## 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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