

# Ultramid® BU50I

## Polyamide 6



### Product Description

Ultramid Ultratough Nylon BU50I is an unreinforced PA6, impact modified injection molding product that maintains its impact strength and ductility to -40 deg F (-40 deg C). The extreme low temperature tolerance of Ultratough Nylon BU50I makes it ideal for applications in which the weldline impact strength at low temperatures is critical.

### Applications

Ultramid BU50I is generally recommended for automotive components, small engines, power tool parts and casings, cold weather and high impact supports gear, such as snowboards, ski components, helmets and hockey masks. For applications requiring painting please refer to the

| PHYSICAL                            | ISO Test Method | Property Value |             |
|-------------------------------------|-----------------|----------------|-------------|
| Density, g/cm                       | 1183            | 1.06           |             |
| Moisture, %                         | 62              |                |             |
| (50% RH)                            |                 | 2.1            |             |
| (Saturation)                        |                 | 7.3            |             |
| MECHANICAL                          | ISO Test Method | Dry            | Conditioned |
| Tensile Modulus, MPa                | 527             |                |             |
| 23C                                 |                 | 1,600          | 510         |
| Tensile stress at yield, MPa        | 527             |                |             |
| 23C                                 |                 | 45             | 27          |
| Tensile strain at yield, %          | 527             |                |             |
| 23C                                 |                 | 4              | 42          |
| Nominal strain at break, %          | 527             |                |             |
| 23C                                 |                 | 40             | >50         |
| Flexural Strength, MPa              | 178             |                |             |
| 23C                                 |                 | 50             | 15          |
| Flexural Modulus, MPa               | 178             |                |             |
| 23C                                 |                 | 1,550          | 460         |
| IMPACT                              | ISO Test Method | Dry            | Conditioned |
| Charpy Notched, kJ/m <sup>2</sup>   | 179             |                |             |
| 23C                                 |                 | 95             | -           |
| Charpy Unnotched, kJ/m <sup>2</sup> | 179             |                |             |
| 23C                                 |                 | N              | -           |
| THERMAL                             | ISO Test Method | Dry            | Conditioned |
| Melting Point, C                    | 3146            | 220            | -           |
| HDT A, C                            | 75              | 50             | -           |
| UL RATINGS                          | UL Test Method  | Property Value |             |
| Flammability Rating, 1.5mm          | UL94            | HB             |             |
| Relative Temperature Index, 1.5mm   | UL746B          |                |             |
| Mechanical w/o Impact, C            |                 | 65             |             |
| Mechanical w/ Impact, C             |                 | 65             |             |
| Electrical, C                       |                 | 65             |             |



## Processing Guidelines

### Material Handling

Max. Water content: 0.15%

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 270-300 degC (518-572 degF)

Mold Temperature 60-85 degC (140-185 degF)

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

### Mold Temperatures

A mold temperature of 60-85 degC (140-185 degF) is recommended, but temperatures of 10-85 degC (50-185 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.

### Fill Rate

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Injection speeds of one inch of ram travel per second are typical.

## Note

Although all statements and information in this publication are believed to be accurate and reliable, they are presented gratis and for guidance only, and risks and liability for results obtained by use of the products or application of the suggestions described are assumed by the user. NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH. Statements or suggestions concerning possible use of the products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that toxicity data and safety measures are indicated or that other measures may not be required.



BASF Corporation  
Engineering Plastics  
609 Biddle Avenue  
Yandotte, MI 48192

