

## Ultramid® B3K Polyamide 6

Ultramid B3K is an easy flowing, heat stabilized PA6 product for fast processing.

### Applications

Typical applications include technical parts with wall thicknesses greater than 2 mm.

| PHYSICAL                                  | ISO Test Method | Property Value |             |
|---|-----------------|----------------|-------------|
| Density, g/cm <sup>3</sup>                | 1183            | 1.13           |             |
| <b>Moisture, %</b>                        | 62              |                |             |
| (50% RH)                                  |                 | 3              |             |
| (Saturation)                              |                 | 9.5            |             |
| RHEOLOGICAL                               | ISO Test Method | Dry            | Conditioned |
| Melt Volume Rate (275 °C/5 Kg), cc/10min. | 1133            | 160            | -           |
| MECHANICAL                                | ISO Test Method | Dry            | Conditioned |
| <b>Tensile Modulus, MPa</b>               | 527             |                |             |
| 23°C                                      |                 | 3,000          | 1,000       |
| <b>Tensile stress at yield, MPa</b>       | 527             |                |             |
| 23°C                                      |                 | 85             | 40          |
| <b>Tensile stress at break, MPa</b>       | 527             |                |             |
| <b>Tensile strain at yield, %</b>         | 527             |                |             |
| 23°C                                      |                 | 3.7            | 20          |
| <b>Nominal strain at break, %</b>         | 527             |                |             |
| 23°C                                      |                 | 20             | >50         |
| <b>Flexural Strength, MPa</b>             | 178             |                |             |

Flexural Modulus, MPa

178

| IMPACT  |  | ISO Test Method | Dry                    | Conditioned |
|---|--|-----------------|------------------------|-------------|
| Izod Notched Impact, kJ/m <sup>2</sup>                |  | 180             |                        |             |
| Charpy Notched, kJ/m <sup>2</sup>                     |  | 179             |                        |             |
| -30°C   |  |                 | 4                      | -           |
| 23°C  |  |                 | 5.5                    | 60          |
| Charpy Unnotched, kJ/m <sup>2</sup>                   |  | 179             |                        |             |
| -30°C   |  |                 | 100                    | -           |
| 23°C  |  |                 | N                      | N           |
| THERMAL   |  | ISO Test Method | Dry                    | Conditioned |
| Melting Point, °C                                     |  | 3146            | 220                    | -           |
| HDT A, °C   |  | 75              | 65                     | -           |
| HDT B, °C   |  | 75              | 180                    | -           |
| Coef. of Linear Thermal Expansion, Parallel, mm/mm °C |  |                 | 0.85 X10 <sup>-4</sup> | -           |
| ELECTRICAL  |  | ISO Test Method | Dry                    | Conditioned |
| Comparative Tracking Index                            |  | IEC 60112       | 600                    | 600         |
| Volume Resistivity (Ohm-m)                            |  | IEC 60093       | 1E13                   | 1E10        |
| Dielectric Constant (100 Hz)                          |  | IEC 60250       | 4                      | -           |
| Dielectric Constant (1 MHz)                           |  | IEC 60250       | 3.5                    | 7           |
| Dissipation Factor (100 Hz), E-4                      |  | IEC 60250       | 100                    | -           |
| Dissipation Factor (1 MHz), E-4                       |  | IEC 60250       | 230                    | 3,000       |
| UL RATINGS  |  | UL Test Method  | Property Value         |             |
| Relative Temperature Index, 0.71mm                    |  | UL746B          |                        |             |
| Electrical, °C  |  |                 | 130                    |             |
| Flammability Rating, 1.5mm                            |  | UL94            | HB                     |             |
| Relative Temperature Index, 1.5mm                     |  | UL746B          |                        |             |

|  |        |     |
|--|--------|-----|
| Mechanical w/o Impact, °C                |        | 115 |
| Mechanical w/ Impact, °C                 |        | 75  |
| Electrical, °C                           |        | 130 |
| Flammability Rating, 3.0mm               | UL94   | V-2 |
| <b>Relative Temperature Index, 3.0mm</b> | UL746B |     |
| Mechanical w/o Impact, °C                |        | 115 |
| Mechanical w/ Impact, °C                 |        | 75  |
| Electrical, °C                           |        | 130 |
| Flammability Rating, 6.0mm               | UL94   | V-2 |
| <b>Relative Temperature Index, 6.0mm</b> | UL746B |     |
| Mechanical w/o Impact, °C                |        | 115 |
| Mechanical w/ Impact, °C                 |        | 75  |
| Electrical, °C                           |        | 130 |

## 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). 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: 240-285°C (464-545°F)

Mold Temperature: 65-80°C (149-176°F)

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

### Mold Temperatures

A mold temperature of 65-80°C (149-176°F) is recommended, however temperatures of as low as 10°C (50°F) 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.

## 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  
1609 Biddle Avenue  
Wyandotte, MI 48192



### **General Information**

800-BC-RESIN

### **Technical Assistance**

800-527-TECH (734-324-5150)

### **Web address**

<http://www.plasticsportal.com/usa>