# 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/cm³ | 1183 | 1.13 | |
| **Moisture, %** | 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** |
| **Tensile Modulus, MPa** | 527 | | |
| 23°C | | 3,000 | 1,000 |
| **Tensile stress at yield, MPa** | 527 | | |
| 23°C | | 85 | 40 |
| **Tensile stress at break, MPa** | 527 | | |
| **Tensile strain at yield, %** | 527 | | |
| 23°C | | 3.7 | 20 |
| **Nominal strain at break, %** | 527 | | |
| 23°C | | 20 | >50 |
| **Flexural Strength, MPa** | 178 | | |

| | | | |
|---|---|---|---|
| **Flexural Modulus, MPa** | 178 | | |
| **IMPACT** | **ISO Test Method** | **Dry** | **Conditioned** |
| **Izod Notched Impact, kJ/m$^2$** | 180 | | |
| **Charpy Notched, kJ/m$^2$** | 179 | | |
| -30°C | | 4 | - |
| 23°C | | 5.5 | 60 |
| **Charpy Unnotched, kJ/m$^2$** | 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 X10-4 | - |
| **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 |
| **Relative Temperature Index, 3.0mm** | UL746B | |
| Mechanical w/o Impact, °C | | 115 |
| Mechanical w/ Impact, °C | | 75 |
| Electrical, °C | | 130 |
| Flammability Rating, 6.0mm | UL94 | V-2 |
| **Relative Temperature Index, 6.0mm** | 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

**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