

# Ultramid® B3M6

Polyamide 6

BASF Corporation

## Message:

Ultramid B3M6 is a 30% mineral reinforced injection molding PA6 grade for industrial items requiring high impact strength and very high dimensional stability, excellent laser markability.

### Applications

Typical applications include industrial items.

| General Information                   |      |                              |                   |                     |
|---------------------------------------|------|------------------------------|-------------------|---------------------|
| UL YellowCard                         |      | E41871-100761800             |                   |                     |
| Filler / Reinforcement                |      | Mineral,30% Filler by Weight |                   |                     |
| Features                              |      | Good Dimensional Stability   |                   |                     |
|                                       |      | High Impact Resistance       |                   |                     |
|                                       |      | Laser Markable               |                   |                     |
|                                       |      | Oil Resistant                |                   |                     |
| Uses                                  |      | Industrial Applications      |                   |                     |
| Agency Ratings                        |      | EC 1907/2006 (REACH)         |                   |                     |
| RoHS Compliance                       |      | RoHS Compliant               |                   |                     |
| Forms                                 |      | Pellets                      |                   |                     |
| Processing Method                     |      | Injection Molding            |                   |                     |
| Physical                              | Dry  | Conditioned                  | Unit              | Test Method         |
| Specific Gravity                      | 1.36 | --                           | g/cm <sup>3</sup> | ASTM D792, ISO 1183 |
| Molding Shrinkage - Flow<br>(3.18 mm) | 0.90 | --                           | %                 |                     |
| Water Absorption                      |      |                              |                   |                     |
| Saturation                            | 6.2  | --                           | %                 | ASTM D570           |
| Saturation, 23°C                      | 6.2  | --                           | %                 | ISO 62              |
| Equilibrium, 50% RH                   | 2.4  | --                           | %                 | ASTM D570           |
| Equilibrium, 23°C, 50%<br>RH          | 2.4  | --                           | %                 | ISO 62              |
| Mechanical                            | Dry  | Conditioned                  | Unit              | Test Method         |
| Tensile Modulus (23°C)                | 4600 | 1700                         | MPa               | ISO 527-2           |
| Tensile Strength                      |      |                              |                   |                     |
| Break, 23°C                           | 76.0 | --                           | MPa               | ASTM D638           |
| Break, 23°C                           | 85.0 | 45.0                         | MPa               | ISO 527-2           |
| Tensile Elongation                    |      |                              |                   |                     |
| Break, 23°C                           | 5.0  | --                           | %                 | ASTM D638           |
| Break, 23°C                           | 15   | 20                           | %                 | ISO 527-2           |
| Flexural Modulus                      |      |                              |                   |                     |
| 23°C                                  | 4100 | --                           | MPa               | ASTM D790           |

|                                   |         |             |                   |                       |
|-----------------------------------|---------|-------------|-------------------|-----------------------|
| 23°C                              | 4000    | 1400        | MPa               | ISO 178               |
| Impact                            | Dry     | Conditioned | Unit              | Test Method           |
| Charpy Notched Impact Strength    |         |             |                   | ISO 179               |
| -30°C                             | 7.0     | --          | kJ/m <sup>2</sup> |                       |
| 23°C                              | 8.0     | --          | kJ/m <sup>2</sup> |                       |
| Charpy Unnotched Impact Strength  |         |             |                   | ISO 179               |
| -30°C                             | 150     | --          | kJ/m <sup>2</sup> |                       |
| 23°C                              | 220     | --          | kJ/m <sup>2</sup> |                       |
| Notched Izod Impact               |         |             |                   |                       |
| -40°C                             | 45      | --          | J/m               | ASTM D256             |
| 23°C                              | 64      | --          | J/m               | ASTM D256             |
| 23°C                              | 6.5     | --          | kJ/m <sup>2</sup> | ISO 180               |
| Thermal                           | Dry     | Conditioned | Unit              | Test Method           |
| Deflection Temperature Under Load |         |             |                   |                       |
| 0.45 MPa, Unannealed              | 195     | --          | °C                | ASTM D648, ISO 75-2/B |
| 1.8 MPa, Unannealed               | 120     | --          | °C                | ASTM D648, ISO 75-2/A |
| Peak Melting Temperature          | 220     | --          | °C                | ASTM D3418, ISO 3146  |
| CLTE                              |         |             |                   |                       |
| Flow                              | 3.0E-5  | --          | cm/cm/°C          | ASTM E831             |
| Flow                              | 6.5E-5  | --          | cm/cm/°C          |                       |
| Transverse                        | 6.0E-5  | --          | cm/cm/°C          |                       |
| RTI Elec                          |         |             |                   | UL 746                |
| 1.50 mm                           | 65.0    | --          | °C                |                       |
| 3.00 mm                           | 65.0    | --          | °C                |                       |
| RTI Imp                           |         |             |                   | UL 746                |
| 1.50 mm                           | 65.0    | --          | °C                |                       |
| 3.00 mm                           | 65.0    | --          | °C                |                       |
| RTI Str                           |         |             |                   | UL 746                |
| 1.50 mm                           | 65.0    | --          | °C                |                       |
| 3.00 mm                           | 65.0    | --          | °C                |                       |
| Electrical                        | Dry     | Conditioned | Unit              | Test Method           |
| Volume Resistivity                |         |             |                   |                       |
| 1.50 mm                           | 1.0E+15 | --          | ohms·cm           | ASTM D257             |
| --                                | 1.0E+15 | --          | ohms·cm           | IEC 60093             |
| Dielectric Constant (1 MHz)       | 3.50    | --          |                   | IEC 60250             |
| Dissipation Factor                |         |             |                   | IEC 60250             |
| 100 Hz                            | 0.020   | --          |                   |                       |
| 1 MHz                             | 0.020   | --          |                   |                       |
| Comparative Tracking Index        | 450     | --          | V                 | IEC 60112             |

| Flammability           | Dry          | Conditioned | Unit | Test Method |
|------------------------|--------------|-------------|------|-------------|
| Flame Rating           |              |             |      | UL 94       |
| 1.50 mm                | HB           | --          |      |             |
| 3.00 mm                | HB           | --          |      |             |
| Injection              | Dry          | Unit        |      |             |
| Drying Temperature     | 83.0         |             | °C   |             |
| Drying Time            | 2.0 to 4.0   |             | hr   |             |
| Suggested Max Moisture | 0.15         |             | %    |             |
| Processing (Melt) Temp | 270 to 295   |             | °C   |             |
| Mold Temperature       | 80.0 to 95.0 |             | °C   |             |
| Injection Pressure     | 3.50 to 12.5 |             | MPa  |             |
| Injection Rate         | Fast         |             |      |             |

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### Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

