

# Ultramid® A3EG6 FC

Polyamide 66

BASF Corporation

## Message:

The BASF Ultramid® FC (Food Contact) grades enable the industry to develop products for food contact applications which are in compliance with multiple regional food contact regulations including FDA, European Food Contact n°2002/72/EC and GMP (EC) n°2023/2006.

| General Information                                 |                                      |                   |                        |             |
|-----------------------------------------------------|--------------------------------------|-------------------|------------------------|-------------|
| UL YellowCard                                       | E41871-233730                        | E333174-101642671 |                        |             |
| Filler / Reinforcement                              | Glass Fiber,30% Filler by Weight     |                   |                        |             |
| Features                                            | Food Contact Acceptable              |                   |                        |             |
|                                                     | Oil Resistant                        |                   |                        |             |
| Agency Ratings                                      | EC 1907/2006 (REACH)                 |                   |                        |             |
|                                                     | EC 2023/2006                         |                   |                        |             |
|                                                     | EU 2002/72/EC                        |                   |                        |             |
|                                                     | FDA Food Contact, Unspecified Rating |                   |                        |             |
| RoHS Compliance                                     | RoHS Compliant                       |                   |                        |             |
| Forms                                               | Pellets                              |                   |                        |             |
| Processing Method                                   | Injection Molding                    |                   |                        |             |
| Physical                                            | Dry                                  | Conditioned       | Unit                   | Test Method |
| Density                                             | 1.36                                 | --                | g/cm <sup>3</sup>      | ISO 1183    |
| Apparent Density                                    | 0.70                                 | --                | g/cm <sup>3</sup>      |             |
| Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)          | 40.0                                 | --                | cm <sup>3</sup> /10min | ISO 1133    |
| Water Absorption                                    |                                      |                   |                        | ISO 62      |
| Saturation, 23°C                                    | 5.2 to 5.8                           | --                | %                      |             |
| Equilibrium, 23°C, 50% RH                           | 1.5 to 1.9                           | --                | %                      |             |
| Viscosity Number (96% H2SO4 (Sulphuric Acid))       | 145                                  | --                | cm <sup>3</sup> /g     | ISO 307     |
| Mold Shrinkage - constrained <sup>1</sup>           | 0.55                                 | --                | %                      |             |
| Maximum Service Temperature - short cycle operation | 240                                  | --                | °C                     |             |
| Temperature Index - at 50% loss of tensile strength |                                      |                   |                        | IEC 60216   |
| -- <sup>2</sup>                                     | 165                                  | --                | °C                     |             |
| -- <sup>3</sup>                                     | 135                                  | --                | °C                     |             |
| Automotive Materials (> 1.00 mm)                    | Passed                               | --                |                        | FMVSS 302   |

|                                                 |                  |             |                   |             |
|-------------------------------------------------|------------------|-------------|-------------------|-------------|
| Polymer Abbreviation                            | PA66-GF30        | --          |                   |             |
| Mechanical                                      | Dry              | Conditioned | Unit              | Test Method |
| Tensile Modulus                                 | 10000            | 7200        | MPa               | ISO 527-2   |
| Tensile Stress (Break)                          | 190              | 130         | MPa               | ISO 527-2   |
| Tensile Strain (Break)                          | 3.0              | 5.0         | %                 | ISO 527-2   |
| Tensile Creep Modulus <sup>4</sup><br>(1000 hr) | --               | 5300        | MPa               | ISO 899-1   |
| Flexural Modulus                                | 8600             | 6500        | MPa               | ISO 178     |
| Flexural Stress                                 | 280              | 210         | MPa               | ISO 178     |
| Impact                                          | Dry              | Conditioned | Unit              | Test Method |
| Charpy Notched Impact Strength                  |                  |             |                   | ISO 179/1eA |
| -30°C                                           | 11               | --          | kJ/m <sup>2</sup> |             |
| 23°C                                            | 13               | 22          | kJ/m <sup>2</sup> |             |
| Charpy Unnotched Impact Strength                |                  |             |                   | ISO 179/1eU |
| -30°C                                           | 70               | --          | kJ/m <sup>2</sup> |             |
| 23°C                                            | 85               | 100         | kJ/m <sup>2</sup> |             |
| Notched Izod Impact Strength (23°C)             | 12               | 16          | kJ/m <sup>2</sup> | ISO 180/A   |
| Thermal                                         | Dry              | Conditioned | Unit              | Test Method |
| Heat Deflection Temperature                     |                  |             |                   |             |
| 0.45 MPa, Unannealed                            | 250              | --          | °C                | ISO 75-2/B  |
| 1.8 MPa, Unannealed                             | 250              | --          | °C                | ISO 75-2/A  |
| Melting Temperature                             | 260              | --          | °C                | ISO 11357-3 |
| CLTE                                            |                  |             |                   | ISO 11359-2 |
| Flow : 23 to 80°C                               | 2.0E-5 to 3.0E-5 | --          | cm/cm/°C          |             |
| Transverse : 23 to 80°C                         | 6.0E-5 to 7.0E-5 | --          | cm/cm/°C          |             |
| Specific Heat                                   | 1500             | --          | J/kg/°C           |             |
| Thermal Conductivity                            | 0.35             | --          | W/m/K             | DIN 52612   |
| Electrical                                      | Dry              | Conditioned | Unit              | Test Method |
| Surface Resistivity                             | --               | 1.0E+10     | ohms              | IEC 60093   |
| Volume Resistivity                              | 1.0E+15          | 1.0E+12     | ohms·cm           | IEC 60093   |
| Relative Permittivity (1 MHz)                   | 3.50             | 5.60        |                   | IEC 60250   |
| Dissipation Factor (1 MHz)                      | 0.014            | 0.16        |                   | IEC 60250   |
| Comparative Tracking Index (Solution A)         | 550              | --          | V                 | IEC 60112   |
| Flammability                                    | Dry              | Conditioned | Unit              | Test Method |
| Flame Rating (1.60 mm)                          | HB               | --          |                   | UL 94       |
| Injection                                       | Dry              | Unit        |                   |             |
| Processing (Melt) Temp                          | 280 to 300       |             | °C                |             |
| Mold Temperature                                | 80.0 to 90.0     |             | °C                |             |

## NOTE

|    |                                                                                                                |
|----|----------------------------------------------------------------------------------------------------------------|
|    | Test box with central gating, dimensions of base (107*47*1,5) mm, processing conditions: TM = 290°C, TW = 80°C |
| 1. |                                                                                                                |
| 2. | 5000 h                                                                                                         |
| 3. | 20000 h                                                                                                        |
| 4. | strain <= 0.5%, 23°C                                                                                           |

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