

# BASF Ultramid® A3X2G7

Ultramid A3X2G7 is a 35% glass fiber reinforced injection molding PA66 grade with improved flame retardance and enhanced long-term stability. Flame retardant based on red phosphorus; very high stiffness and strength; outstanding mechanical and electrical properties.

| Physical Properties                | Metric                 | English                   | Comments              |
|------------------------------------|------------------------|---------------------------|-----------------------|
| Density                            | 1.45 g/cc              | 0.0524 lb/in <sup>3</sup> | ISO 1183              |
| Water Absorption                   | 4.4 - 5.0 %            | 4.4 - 5.0 %               | ISO 62                |
| Moisture Absorption at Equilibrium | 1.0 - 1.4 %            | 1.0 - 1.4 %               | 23°C/50% R.H.; ISO 62 |
| Viscosity Number                   | 140 cm <sup>3</sup> /g | 1.40 dl/g                 | ISO 307               |
| Linear Mold Shrinkage              | 0.0045 cm/cm           | 0.0045 in/in              |                       |

|           |                                                       |                                                       |          |
|-----------|-------------------------------------------------------|-------------------------------------------------------|----------|
| Melt Flow | 43.5 g/10 min<br>@Load 5.00 kg,<br>Temperature 275 °C | 43.5 g/10 min<br>@Load 11.0 lb,<br>Temperature 527 °F | ISO 1133 |
|-----------|-------------------------------------------------------|-------------------------------------------------------|----------|

| Mechanical Properties      | Metric                                           | English                                              | Comments          |
|----------------------------|--------------------------------------------------|------------------------------------------------------|-------------------|
| Tensile Strength, Yield    | 160 MPa                                          | 23200 psi                                            | 50mm/min; ISO 527 |
| Elongation at Yield        | 3.0 %                                            | 3.0 %                                                | 50mm/min; ISO 527 |
| Modulus of Elasticity      | 11.0 GPa                                         | 1600 ksi                                             | ISO 527           |
| Flexural Modulus           | 9.20 GPa                                         | 1330 ksi                                             | ISO 178           |
| Izod Impact, Notched (ISO) | 13.0 kJ/m <sup>2</sup>                           | 6.19 ft-lb/in <sup>2</sup>                           | ISO 180/A         |
| Charpy Impact Unnotched    | 7.00 J/cm <sup>2</sup>                           | 33.3 ft-lb/in <sup>2</sup>                           | ISO 179/1eU       |
|                            | 6.50 J/cm <sup>2</sup><br>@Temperature -30.0 °C  | 30.9 ft-lb/in <sup>2</sup><br>@Temperature -22.0 °F  | ISO 179/1eU       |
| Charpy Impact, Notched     | 1.40 J/cm <sup>2</sup>                           | 6.66 ft-lb/in <sup>2</sup>                           | ISO 179/1eA       |
|                            | 10.00 J/cm <sup>2</sup><br>@Temperature -30.0 °C | 47.59 ft-lb/in <sup>2</sup><br>@Temperature -22.0 °F | ISO 179/1eA       |

| Electrical Properties | Metric                      | English                     | Comments  |
|-----------------------|-----------------------------|-----------------------------|-----------|
| Volume Resistivity    | 1.00e+13 ohm-cm             | 1.00e+13 ohm-cm             | IEC 60093 |
| Dielectric Constant   | 3.6<br>@Frequency 1e+6 Hz   | 3.6<br>@Frequency 1e+6 Hz   | IEC 60250 |
| Dissipation Factor    | 0.020<br>@Frequency 1e+6 Hz | 0.020<br>@Frequency 1e+6 Hz | IEC 60250 |

|                            |       |       |                            |
|----------------------------|-------|-------|----------------------------|
| Comparative Tracking Index | 600 V | 600 V | Test Solution A; IEC 60112 |
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