

POLYMER SOLUTIONS

Alumide

Material Data Sheet

ALUMIDE

Product Description

Alumide is a metallic gray, aluminium-filled polyamide 12 powder. Parts made from Alumide are characterized by high stiffness, metallic appearance and good post-processing possibilities. The surfaces of alumide components can be very easily refined by grinding, polishing or coating. Machining is simplified by the chip-breaking effect of the aluminium filling.

MAIN CHARACTERISTICS

- Thermal conductivity (limited)
- High stiffness
- Easy postprocessing

TYPICAL APPLICATIONS

- Design elements
- Production equipment like jigs and fixtures
- Injection mold for small batch production

| MECHANICAL PROPERTIES | DRY / CONDITIONED | UNIT | TEST STANDARD |
|--|-------------------|-------------------|---------------|
| Tensile Modulus | | | ISO 527-1/-2 |
| X Orientation | 3800 / - | MPa | |
| Y Orientation | 3800 / - | MPa | |
| Tensile Strength | | | ISO 527-1/-2 |
| X Orientation | 48 / - | MPa | |
| Y Orientation | 48 / - | MPa | |
| Strain at Break | | | ISO 527-1/-2 |
| X Orientation | 4 / - | % | |
| Flexural Modulus | | | ISO 178 |
| X Orientation | 3600 / - | MPa | |
| Flexural Strength | | | ISO 178 |
| X Orientation | 72 / - | MPa | |
| Charpy Impact Strength (+23°C) | | | ISO 179/1eU |
| X Orientation | 29 / - | kJ/m ² | |
| Charpy Notched Impact Strength (+23°C) | | | ISO 179/1eA |
| X Orientation | 4.6 / - | kJ/m ² | |
| Shore D Hardness | | | ISO 7619-1 |
| X Orientation | 76 / - | - | |

| THERMAL PROPERTIES | DRY / CONDITIONED | UNIT | TEST STANDARD |
|---|-------------------|------|----------------|
| Melting Temperature | 176 | °C | ISO 11357-1/-3 |
| Temperature of Deflection under Load 1.80 MPa | | | ISO 75-1/-2 |
| X Orientation | 144 | °C | |
| Temperature of Deflection under Load 0.45 MPa | | | ISO 75-1/-2 |
| X Orientation | 175 | °C | |
| Vicat Softening Temperature | | | ISO 306/B50 |
| X Orientation | 169 | °C | |

| ELECTRICAL PROPERTIES | DRY / CONDITIONED | UNIT | TEST STANDARD |
|---|-------------------|-------|---------------|
| Volume Resistivity X Orientation | 3E12 / - | Ohm·m | IEC 62631-3-1 |
| Surface Resistivity X Orientation | 5E14 / - | Ohm | IEC 62631-3-2 |
| Relative Permittivity 100 Hz X Orientation | 13 / - | - | IEC 62631-2-1 |
| Relative Permittivity 1 MHz X Orientation | 10 / - | - | IEC 62631-2-1 |
| Dissipation Factor 1 MHz X Orientation | 180 / - | E-4 | IEC 62631-2-1 |
| Electric Strength X Orientation | 0.1 / - | kV/mm | IEC 60243-1 |

| OTHER PROPERTIES | VALUE | UNIT | TEST STANDARD |
|------------------|-------|-------------------|---------------|
| Density | 1.36 | g/cm ³ | EOS Method |
| Powder Color | grey | - | - |
| Components Color | grey | - | - |

HEADQUARTERS

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