

# Akulon® K224-HG6

Polyamide 6  
DSM Engineering Plastics

Message:

Akulon® K224-HG6 is a Polyamide 6 (Nylon 6) material filled with 30% glass fiber. It is available in Asia Pacific, Europe, or North America. Important attributes of Akulon® K224-HG6 are:  
Flame Rated  
Heat Stabilizer  
Typical application of Akulon® K224-HG6: Automotive

| General Information    |                                              |               |               |
|------------------------|----------------------------------------------|---------------|---------------|
| UL YellowCard          | E43392-235098                                | E43392-235100 | E47960-240102 |
| Filler / Reinforcement | Glass Fiber,30% Filler by Weight             |               |               |
| Additive               | Heat Stabilizer                              |               |               |
| Features               | Heat Stabilized                              |               |               |
| Multi-Point Data       | Isothermal Stress vs. Strain (ISO 11403-1)   |               |               |
|                        | Secant Modulus vs. Strain (ISO 11403-1)      |               |               |
|                        | Shear Modulus vs. Temperature (ISO 11403-1)  |               |               |
|                        | Specific Volume vs Temperature (ISO 11403-2) |               |               |
|                        | Viscosity vs. Shear Rate (ISO 11403-2)       |               |               |

| Physical                  | Dry  | Conditioned | Unit              | Test Method |
|---------------------------|------|-------------|-------------------|-------------|
| Density                   | 1.35 | --          | g/cm <sup>3</sup> | ISO 1183    |
| Molding Shrinkage         |      |             |                   | ISO 294-4   |
| Across Flow               | 0.90 | --          | %                 |             |
| Flow                      | 0.30 | --          | %                 |             |
| Water Absorption          |      |             |                   | ISO 62      |
| Saturation, 23°C          | 6.3  | --          | %                 |             |
| Equilibrium, 23°C, 50% RH | 1.9  | --          | %                 |             |

| Mechanical             | Dry  | Conditioned | Unit | Test Method |
|------------------------|------|-------------|------|-------------|
| Tensile Modulus        | 9500 | 6000        | MPa  | ISO 527-2   |
| Tensile Stress (Break) | 180  | 110         | MPa  | ISO 527-2   |
| Tensile Strain (Break) | 3.5  | 7.0         | %    | ISO 527-2   |
| Flexural Modulus       | 8600 | --          | MPa  | ISO 178     |
| Flexural Stress        | 235  | --          | MPa  | ISO 178     |

| Impact                         | Dry | Conditioned | Unit              | Test Method |
|--------------------------------|-----|-------------|-------------------|-------------|
| Charpy Notched Impact Strength |     |             |                   | ISO 179/1eA |
| -30°C                          | 11  | 11          | kJ/m <sup>2</sup> |             |
| 23°C                           | 12  | 25          | kJ/m <sup>2</sup> |             |

|                                  |            |             |                   |                      |
|----------------------------------|------------|-------------|-------------------|----------------------|
| Charpy Unnotched Impact Strength |            |             |                   | ISO 179/1eU          |
| -30°C                            | 75         | 75          | kJ/m <sup>2</sup> |                      |
| 23°C                             | 90         | 110         | kJ/m <sup>2</sup> |                      |
| Thermal                          | Dry        | Conditioned | Unit              | Test Method          |
| Heat Deflection Temperature      |            |             |                   |                      |
| 0.45 MPa, Unannealed             | 220        | --          | °C                | ISO 75-2/B           |
| 1.8 MPa, Unannealed              | 200        | --          | °C                | ISO 75-2/A           |
| Melting Temperature <sup>1</sup> | 220        | --          | °C                | ISO 11357-3          |
| CLTE                             |            |             |                   | ISO 11359-2          |
| Flow                             | 2.0E-5     | --          | cm/cm/°C          |                      |
| Transverse                       | 7.0E-5     | --          | cm/cm/°C          |                      |
| Electrical                       | Dry        | Conditioned | Unit              | Test Method          |
| Surface Resistivity              | --         | 1.0E+13     | ohms              | IEC 60093            |
| Volume Resistivity               | 1.0E+14    | 1.0E+12     | ohms·cm           | IEC 60093            |
| Electric Strength                | 30         | 15          | kV/mm             | IEC 60243-1          |
| Relative Permittivity            |            |             |                   | IEC 60250            |
| 100 Hz                           | 3.50       | 20.0        |                   |                      |
| 1 MHz                            | 3.30       | 5.00        |                   |                      |
| Dissipation Factor               |            |             |                   | IEC 60250            |
| 100 Hz                           | 5.0E-3     | 0.30        |                   |                      |
| 1 MHz                            | 0.015      | 0.12        |                   |                      |
| Comparative Tracking Index       | --         | 500         | V                 | IEC 60112            |
| Flammability                     | Dry        | Conditioned | Unit              | Test Method          |
| Flammability Classification      |            |             |                   | IEC 60695-11-10, -20 |
| 0.750 mm                         | HB         | --          |                   |                      |
| 1.50 mm                          | HB         | --          |                   |                      |
| Glow Wire Flammability Index     |            |             |                   | IEC 60695-2-12       |
| 1.50 mm                          | 700        | --          | °C                |                      |
| 2.00 mm                          | 700        | --          | °C                |                      |
| Glow Wire Ignition Temperature   |            |             |                   | IEC 60695-2-13       |
| 1.50 mm                          | 725        | --          | °C                |                      |
| 2.00 mm                          | 725        | --          | °C                |                      |
| Injection                        | Dry        | Unit        |                   |                      |
| Drying Temperature               | 80.0       |             | °C                |                      |
| Drying Time                      | 4.0 to 8.0 |             | hr                |                      |
| Rear Temperature                 | 255 to 265 |             | °C                |                      |
| Middle Temperature               | 265 to 275 |             | °C                |                      |
| Front Temperature                | 265 to 280 |             | °C                |                      |
| Nozzle Temperature               | 260 to 280 |             | °C                |                      |

|                         |               |     |
|-------------------------|---------------|-----|
| Processing (Melt) Temp  | 250 to 285    | °C  |
| Mold Temperature        | 50.0 to 80.0  | °C  |
| Injection Rate          | Moderate-Fast |     |
| Back Pressure           | 3.00 to 10.0  | MPa |
| Screw Compression Ratio | 2.5:1.0       |     |

NOTE

1. 10°C/min

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