

# Grilamid® L 16 LM

Polyamide 12

EMS-GRIVORY

Message:

Grilamid® L 16 LM is a Polyamide 12 (Nylon 12) material. It is available in Africa & Middle East, Asia Pacific, Europe, Latin America, or North America for extrusion or injection molding.

Important attributes of Grilamid® L 16 LM are:

- Flame Rated
- RoHS Compliant
- Good Mold Release
- Good UV Resistance
- Low Viscosity

Typical applications include:

- Electrical/Electronic Applications
- Consumer Goods
- Engineering/Industrial Parts
- Hose/Tubing
- Industrial Applications

| General Information |                                    |
|---------------------|------------------------------------|
| UL YellowCard       | E53898-633204                      |
| Additive            | Nucleating Agent                   |
|                     | UV Stabilizer                      |
| Features            | Good Flow                          |
|                     | Good Mold Release                  |
|                     | Good UV Resistance                 |
|                     | Low Viscosity                      |
|                     | Nucleated                          |
| Uses                | Connectors                         |
|                     | Consumer Applications              |
|                     | Electrical/Electronic Applications |
|                     | Engineering Parts                  |
|                     | Hydraulic Applications             |
|                     | Industrial Applications            |
|                     | Pneumatic Applications             |
|                     | Power/Other Tools                  |
|                     | Sporting Goods                     |
|                     | Tubing                             |
|                     | Wire & Cable Applications          |
| RoHS Compliance     | RoHS Compliant                     |
| Forms               | Granules                           |

| Processing Method                |          | Extrusion                                    |                   |             |
|----------------------------------|----------|----------------------------------------------|-------------------|-------------|
|                                  |          | Injection Molding                            |                   |             |
| 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                          | 1.01     | --                                           | g/cm <sup>3</sup> | ISO 1183    |
| Molding Shrinkage                |          |                                              |                   | ISO 294-4   |
| Across Flow                      | 0.80     | --                                           | %                 |             |
| Flow                             | 0.80     | --                                           | %                 |             |
| Water Absorption                 |          |                                              |                   | ISO 62      |
| Saturation, 23°C                 | 1.5      | --                                           | %                 |             |
| Equilibrium, 23°C, 50% RH        | 0.70     | --                                           | %                 |             |
| Hardness                         | Dry      | Conditioned                                  | Unit              | Test Method |
| Shore Hardness (Shore D, 15 sec) | --       | 70                                           |                   | ISO 868     |
| Mechanical                       | Dry      | Conditioned                                  | Unit              | Test Method |
| Tensile Modulus                  | 1500     | 1100                                         | MPa               | ISO 527-2   |
| Tensile Stress                   |          |                                              |                   | ISO 527-2   |
| Yield                            | 45.0     | 45.0                                         | MPa               |             |
| Break                            | 50.0     | 50.0                                         | MPa               |             |
| Tensile Strain (Yield)           | 5.0      | 15                                           | %                 | ISO 527-2   |
| Nominal Tensile Strain at Break  | > 50     | > 50                                         | %                 | ISO 527-2   |
| Impact                           | Dry      | Conditioned                                  | Unit              | Test Method |
| Charpy Notched Impact Strength   |          |                                              |                   | ISO 179/1eA |
| -30°C                            | --       | 6.0                                          | kJ/m <sup>2</sup> |             |
| 23°C                             | --       | 7.0                                          | kJ/m <sup>2</sup> |             |
| Charpy Unnotched Impact Strength |          |                                              |                   | ISO 179/1eU |
| -30°C                            | No Break | No Break                                     |                   |             |
| 23°C                             | No Break | No Break                                     |                   |             |
| Thermal                          | Dry      | Conditioned                                  | Unit              | Test Method |
| Heat Deflection Temperature      |          |                                              |                   |             |
| 0.45 MPa, Unannealed             | 125      | --                                           | °C                | ISO 75-2/B  |
| 1.8 MPa, Unannealed              | 50.0     | --                                           | °C                | ISO 75-2/A  |

|                                        |                      |             |                 |                      |
|----------------------------------------|----------------------|-------------|-----------------|----------------------|
| Continuous Use Temperature             |                      |             | Internal Method |                      |
| -- <sup>1</sup>                        | 90.0 to 110          | --          | °C              |                      |
| -- <sup>2</sup>                        | 150                  | --          | °C              |                      |
| Melting Temperature <sup>3</sup>       | 178                  | --          | °C              | ISO 11357-3          |
| CLTE                                   |                      |             |                 | ISO 11359-2          |
| Flow                                   | 1.2E-4               | --          | cm/cm/°C        |                      |
| Transverse                             | 1.4E-4               | --          | cm/cm/°C        |                      |
| Electrical                             | Dry                  | Conditioned | Unit            | Test Method          |
| Surface Resistivity                    | --                   | 1.0E+12     | ohms            | IEC 60093            |
| Volume Resistivity                     | --                   | 1.0E+13     | ohms·cm         | IEC 60093            |
| Electric Strength                      | --                   | 32          | kV/mm           | IEC 60243-1          |
| Comparative Tracking Index             | --                   | 600         | V               | IEC 60112            |
| Flammability                           | Dry                  | Conditioned | Unit            | Test Method          |
| Flammability Classification (0.800 mm) | HB                   | --          |                 | IEC 60695-11-10, -20 |
| Additional Information                 | Dry                  | Conditioned |                 | Test Method          |
| ISO Type                               | PA12, EHLS, 14- 010N | --          |                 | ISO 1874             |
| NOTE                                   |                      |             |                 |                      |
| 1.                                     | Long Term            |             |                 |                      |
| 2.                                     | Short Term           |             |                 |                      |
| 3.                                     | 10°C/min             |             |                 |                      |

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