

# Grilamid® LV-23 X ESD

Polyamide 12

EMS-GRIVORY

## Message:

Grilamid® LV-23 X ESD is a Polyamide 12 (Nylon 12) material filled with 23% glass fiber. It is available in Africa & Middle East, Asia Pacific, Europe, Latin America, or North America for injection molding.

Important attributes of Grilamid® LV-23 X ESD are:

- Flame Rated
- Antistatic
- Good UV Resistance
- Heat Resistant
- Impact Resistant

Typical applications include:

- Automotive
- Outdoor Applications

| General Information       |      |                                  |                   |             |
|---------------------------|------|----------------------------------|-------------------|-------------|
| Filler / Reinforcement    |      | Glass Fiber,23% Filler by Weight |                   |             |
| Additive                  |      | Antistatic                       |                   |             |
| Features                  |      | Antistatic                       |                   |             |
|                           |      | Good UV Resistance               |                   |             |
|                           |      | High Heat Resistance             |                   |             |
|                           |      | High Impact Resistance           |                   |             |
|                           |      | Hydrolysis Resistant             |                   |             |
| Uses                      |      | Automotive Applications          |                   |             |
|                           |      | Outdoor Applications             |                   |             |
| Forms                     |      | Granules                         |                   |             |
| Processing Method         |      | Injection Molding                |                   |             |
| Physical                  | Dry  | Conditioned                      | Unit              | Test Method |
| Density                   | 1.23 | --                               | g/cm <sup>3</sup> | ISO 1183    |
| Molding Shrinkage         |      |                                  |                   | ISO 294-4   |
| Across Flow               | 1.0  | --                               | %                 |             |
| Flow                      | 0.30 | --                               | %                 |             |
| Water Absorption          |      |                                  |                   | ISO 62      |
| Saturation, 23°C          | 1.2  | --                               | %                 |             |
| Equilibrium, 23°C, 50% RH | 0.50 | --                               | %                 |             |
| Hardness                  | Dry  | Conditioned                      | Unit              | Test Method |
| Ball Indentation Hardness | --   | 115                              | MPa               | ISO 2039-1  |
| Mechanical                | Dry  | Conditioned                      | Unit              | Test Method |
| Tensile Modulus           | --   | 5500                             | MPa               | ISO 527-2   |
| Tensile Stress (Break)    | --   | 100                              | MPa               | ISO 527-2   |

|                                        |                            |             |                   |                      |
|----------------------------------------|----------------------------|-------------|-------------------|----------------------|
| Tensile Strain (Break)                 | --                         | 5.0         | %                 | ISO 527-2            |
| Impact                                 | Dry                        | Conditioned | Unit              | Test Method          |
| Charpy Notched Impact Strength         |                            |             |                   | ISO 179/1eA          |
| -30°C                                  | --                         | 8.0         | kJ/m <sup>2</sup> |                      |
| 23°C                                   | --                         | 10          | kJ/m <sup>2</sup> |                      |
| Charpy Unnotched Impact Strength       |                            |             |                   | ISO 179/1eU          |
| -30°C                                  | --                         | 35          | kJ/m <sup>2</sup> |                      |
| 23°C                                   | --                         | 55          | kJ/m <sup>2</sup> |                      |
| Thermal                                | Dry                        | Conditioned | Unit              | Test Method          |
| Heat Deflection Temperature            |                            |             |                   |                      |
| 1.8 MPa, Unannealed                    | 160                        | --          | °C                | ISO 75-2/A           |
| 8.0 MPa, Unannealed                    | 110                        | --          | °C                | ISO 75-2/C           |
| Maximum Use Temperature                |                            |             |                   | Internal Method      |
| Long Term                              | 90 to 120                  | --          | °C                |                      |
| Short Term                             | 150                        | --          | °C                |                      |
| ISO Type                               | PA12, MHRZ, 18-060, GF23+C | --          |                   | ISO 1874             |
| Melting Temperature <sup>1</sup>       | 178                        | --          | °C                | ISO 11357-3          |
| CLTE                                   |                            |             |                   | ISO 11359-2          |
| Flow                                   | 1.1E-4                     | --          | cm/cm/°C          |                      |
| Transverse                             | 1.2E-4                     | --          | cm/cm/°C          |                      |
| Electrical                             | Dry                        | Conditioned | Unit              | Test Method          |
| Surface Resistivity                    | --                         | 1.0E+3      | ohms              | IEC 60093            |
| Volume Resistivity                     | --                         | 1.0E+4      | ohms·cm           | IEC 60093            |
| Flammability                           | Dry                        | Conditioned | Unit              | Test Method          |
| Flammability Classification (0.800 mm) | HB                         | --          |                   | IEC 60695-11-10, -20 |
| NOTE                                   |                            |             |                   |                      |
| 1.                                     | 10°C/min                   |             |                   |                      |

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