

# Grilon® F 40 NL

Polyamide 6

EMS-GRIVORY

## Message:

Grilon® F 40 NL is a Polyamide 6 (Nylon 6) material. It is available in Africa & Middle East, Asia Pacific, Europe, Latin America, or North America for blown film, cast film, extrusion, or film extrusion.

Important attributes of Grilon® F 40 NL are:

RoHS Compliant

Food Contact Acceptable

High Viscosity

Medium Viscosity

Nucleated

Typical applications include:

Film

Coating Applications

Food Contact Applications

Hose/Tubing

Packaging

| General Information |                                      |
|---------------------|--------------------------------------|
| Additive            | Nucleating Agent                     |
|                     | UV Stabilizer                        |
| Features            | Barrier Resin                        |
|                     | Food Contact Acceptable              |
|                     | High Viscosity                       |
|                     | Medium Viscosity                     |
|                     | Nucleated                            |
| Uses                | Cast Film                            |
|                     | Coating Applications                 |
|                     | Film                                 |
|                     | Non-oriented Film                    |
|                     | Oriented Film                        |
|                     | Packaging                            |
|                     | Paper Coatings                       |
|                     | Tubing                               |
| Agency Ratings      | EU Food Contact, Unspecified Rating  |
|                     | FDA Food Contact, Unspecified Rating |
| RoHS Compliance     | RoHS Compliant                       |
| Forms               | Granules                             |
| Processing Method   | Blown Film                           |

Cast Film  
Extrusion  
Film Extrusion

| Multi-Point Data                             |      | Viscosity vs. Shear Rate (ISO 11403-2) |                                            |                |
|----------------------------------------------|------|----------------------------------------|--------------------------------------------|----------------|
| Physical                                     | Dry  | Conditioned                            | Unit                                       | Test Method    |
| Density                                      | 1.14 | --                                     | g/cm <sup>3</sup>                          | ISO 1183       |
| Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)   | 25.0 | --                                     | cm <sup>3</sup> /10min                     | ISO 1133       |
| Water Absorption                             |      |                                        |                                            | ISO 62         |
| Saturation, 23°C                             | 9.0  | --                                     | %                                          |                |
| Equilibrium, 23°C, 50% RH                    | 3.0  | --                                     | %                                          |                |
| Mechanical                                   | Dry  | Conditioned                            | Unit                                       | Test Method    |
| Tensile Modulus                              | 3000 | 750                                    | MPa                                        | ISO 527-2      |
| Coefficient of Friction (Dynamic)            | 0.25 | --                                     |                                            | ISO 8295       |
| Films                                        | Dry  | Conditioned                            | Unit                                       | Test Method    |
| Tensile Stress                               |      |                                        |                                            | ISO 527-3      |
| MD : Yield                                   | 35.0 | --                                     | MPa                                        |                |
| TD : Yield                                   | 30.0 | --                                     | MPa                                        |                |
| Tensile Elongation                           |      |                                        |                                            | ISO 527-3      |
| MD : Yield                                   | 15   | --                                     | %                                          |                |
| TD : Yield                                   | 15   | --                                     | %                                          |                |
| MD : Break                                   | 700  | --                                     | %                                          |                |
| TD : Break                                   | 700  | --                                     | %                                          |                |
| Elmendorf Tear Strength                      |      |                                        |                                            | ISO 6383-2     |
| MD                                           | 10   | --                                     | N                                          |                |
| TD                                           | 10   | --                                     | N                                          |                |
| Trouser Tear Resistance                      |      |                                        |                                            | ISO 6383-1     |
| MD                                           | 30.0 | --                                     | N/mm                                       |                |
| TD                                           | 30.0 | --                                     | N/mm                                       |                |
| Water Vapor Transmission Rate (23°C, 85% RH) | 15   | --                                     | g/m <sup>2</sup> /24 hr                    | DIS 15106-1/-2 |
| Oxygen Transmission Rate                     |      |                                        |                                            | DIS 15105-1/-2 |
| 23°C <sup>1</sup>                            | 25   | --                                     | cm <sup>3</sup> /m <sup>2</sup> /bar/24 hr |                |
| 23°C <sup>2</sup>                            | 50   | --                                     | cm <sup>3</sup> /m <sup>2</sup> /bar/24 hr |                |
| Carbon Dioxide Transmission Rate             |      |                                        |                                            | DIS 15105-1/-2 |
| 23°C <sup>3</sup>                            | 80.0 | --                                     | cm <sup>3</sup> /m <sup>2</sup> /bar/24 hr |                |
| 23°C <sup>4</sup>                            | 250  | --                                     | cm <sup>3</sup> /m <sup>2</sup> /bar/24 hr |                |
| Thermal                                      | Dry  | Conditioned                            | Unit                                       | Test Method    |
| Melting Temperature <sup>5</sup>             | 222  | --                                     | °C                                         | ISO 11357-3    |
| Optical                                      | Dry  | Conditioned                            |                                            | Test Method    |

|             |          |    |          |
|-------------|----------|----|----------|
| Gloss (60°) | 100      | -- | ISO 2813 |
| NOTE        |          |    |          |
| 1.          | 0% RH    |    |          |
| 2.          | 85% RH   |    |          |
| 3.          | 0% RH    |    |          |
| 4.          | 85% RH   |    |          |
| 5.          | 10°C/min |    |          |

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