Product Information

# VESTAMID® LC-GF30 NC

## GLASS FIBER REINFORCED PA12 COMPOUND WITH HIGH STRAIN AT BREAK FOR INJECTION MOLDING

**VESTAMID® LC-GF30 NC** is a semi-crystalline, heat- and UV-stabilized compound based on PA 12 from which connectors are preferrably produced by injection molding. The polyamide compound is especially suitable for the automotive and mobility sector. The semi-crystalline molding compound absorbs only small amounts of water. Components made from **VESTAMID® LC-GF30 NC** therefore have excellent dimensional accuracy with changing ambient humidity and constant general chemical stability.

The semi-crystalline polymer is characterized by its outstanding mechanical and thermal load capacity.

Molding or process-specific deviations from the recommended processing parameters are possible to a certain extent if the cavity or the process requires it.

**VESTAMID® LC-GF30 NC** is delivered as cylindrical-granules in ready-to-process condition, in moisture-tight packaging.

The use of colorants may change property values.

The results presented were generated from a small number of production lots. They are therefore provisional and not yet the result of a statistical analysis.

The values presented are typical or average values, they do not constitute a specification.

### Key Features

**Industrial Sector**
Automotive and Mobility, Industry and Engineering

**Processing**
Injection molding

**Delivery form**
Pellets, Granules

**Optics**
Laser absorbing

**Resistance to**
Heat (thermal stability), UV / light / weathering

**Electrical**
Insulating

**Conformity**
Automotive

**Additives**
Glass fibers

| Mechanical properties ISO | dry | Unit | Test Standard |
|---|---|---|---|
| Tensile modulus | **1E6** | psi | ISO 527 |
| Yield stress | **17400** | psi | ISO 527 |

| | | | |
|---|---|---|---|
| Yield strain | **5** | % | ISO 527 |
| Stress at break | **16800** | psi | ISO 527 |
| Strain at break, B | **7** | % | ISO 527 |
| Nominal strain at break, tB | **6** | % | ISO 527 |
| Charpy impact strength, +23°C | **46.6** | ftlb/in$^2$ | ISO 179/1eU |
| Type of failure | **C** | - | - |
| Charpy impact strength, -30°C | **48.5** | ftlb/in$^2$ | ISO 179/1eU |
| Type of failure | **C** | - | - |
| Charpy impact strength, -40°C | **50.4** | ftlb/in$^2$ | ISO 179/1eU |
| Type of failure | **C** | - | - |
| Charpy notched impact strength, +23°C | **12.8** | ftlb/in$^2$ | ISO 179/1eA |
| Type of failure | **C** | - | - |
| Charpy notched impact strength, -30°C | **9.04** | ftlb/in$^2$ | ISO 179/1eA |
| Type of failure | **C** | - | - |
| Charpy notched impact strength, -40°C | **8.56** | ftlb/in$^2$ | ISO 179/1eA |
| Type of failure | **C** | - | - |

| **Thermal properties** | **dry** | **Unit** | **Test Standard** |
|---|---|---|---|
| Melting temperature | **352** | °F | ISO 11357-1/-3 |
| Glass transition temperature, DSC | **109** | °F | ISO 11357-1/-2 |
| Temp. of deflection under load A, 1.80 MPa | **329** | °F | ISO 75-1/-2 |
| Temp. of deflection under load B, 0.45 MPa | **354** | °F | ISO 75-1/-2 |
| Vicat softening temperature A, 10 N, 50 K/h | **351** | °F | ISO 306 |
| Vicat softening temperature B, 50 N, 50 K/h | **345** | °F | ISO 306 |

| **Physical properties** | **dry** | **Unit** | **Test Standard** |
|---|---|---|---|
| Density | **1.24** | g/cm$^3$ | ISO 1183 |
| Moisture content | **0.054** | wt.-% | ISO 15512 |

| | | | |
|---|---|---|---|
| Shore D hardness | **80** | - | ISO 7619-1 |

| **Rheological properties** | **dry** | **Unit** | **Test Standard** |
|---|---|---|---|
| Melt volume-flow rate, MVR | **23** | $cm^3$/10min | ISO 1133 |
| Temperature | **275** | °C | - |
| Load | **5** | kg | - |
| Molding shrinkage, parallel | **0.2** | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | **0.8** | % | ISO 294-4, 2577 |
| Mold temperature | **176** | °F | - |
| Melt temperature | **500** | °F | - |
| Flow length, flow spiral | **15.8** | in | Evonik standard |
| Flow front velocity, flow spiral | **37.4** | in/s | Evonik standard |
| Flow cross section | **6 x 2** | $mm^2$ | Evonik standard |
| Mold temperature, flow spiral | **482** | °F | Evonik standard |
| Melt temperature, flow spiral | **176** | °F | Evonik standard |
| Injection pressure, flow spiral | **21800** | psi | Evonik standard |
| Flow length, flow spiral | **20** | in | Evonik standard |
| Flow front velocity, flow spiral | **37.4** | in/s | Evonik standard |
| Flow cross section | **6 x 2** | $mm^2$ | Evonik standard |
| Mold temperature, flow spiral | **482** | °F | Evonik standard |
| Melt temperature, flow spiral | **176** | °F | Evonik standard |
| Injection pressure, flow spiral | **29000** | psi | Evonik standard |

| **Polymer analytics** | **dry** | **Unit** | **Test Standard** |
|---|---|---|---|
| Corrected Viscosity number | **172** | $cm^3/g$ | ISO 307, 1157, 1628 |
| Rel. solution viscosity | **1.86** | - | ISO 307 |
| Amino end group | **54** | mmol/kg | Evonik standard |
| Carboxyl end group | **6** | mmol/kg | Evonik standard |

## Characteristics

**Applications**
Quick-connectors

**Special Characteristics**
Halogen-free, Semi-crystalline, U.V. stabilized, Medium viscosity

**Features**
Lightweight, Non-corrosive

**Color**
Natural color

**Additives**
Light stabilizer

**Delivery form**
Cylindrical pellets

**Chemical Resistance**
Fuel resistance

| Processing Recommendation Injection Molding | dry | Unit | Test Standard |
|---|---|---|---|
| Pre-drying - Temperature | **176 - 212** | °F | - |
| Pre-drying - Time | **2 - 4** | h | - |
| Processing humidity | **⩽0.1** | % | - |
| Melt temperature | **464 - 536** | °F | - |
| Mold temperature | **140 - 212** | °F | - |
| Feed temperature | **104 - 140** | °F | - |
| Zone 1 | **500** | °F | - |
| Zone 2 | **500** | °F | - |
| Zone 3 | **500** | °F | - |
| Zone 4 | **122** | °F | - |
| Nozzle temperature | **500** | °F | - |
| Screw speed | **127** | rpm | - |
| Circumferential speed | **1.97 - 7.87** | in/s | - |
| Back pressure | **43.5 - 116** | psi | - |