

Product Information

**VESTAMID® LC-GF23 BK**

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



**VESTAMID® LC-GF23 BK** is a semi-crystalline, heat- and UV-stabilized compound based on PA 12 from which connectors are preferably 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-GF23 BK** 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-GF23 BK** is delivered as cylindrical-granules in ready-to-process condition, in moisture-tight packaging.

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

**Resistance to**

Heat (thermal stability), UV / light / weathering

**Processing**

Injection molding

**Electrical**

Insulating

**Delivery form**

Pellets, Granules

**Conformity**

Automotive

**Optics**

Laser absorbing

**Additives**

Glass fibers

**Mechanical properties ISO**

Tensile modulus

**dry**

**833000**

**Unit**

psi

**Test Standard**

ISO 527

Yield stress

**16000**

psi

ISO 527

Yield strain

**4**

%

ISO 527

Stress at break	<b>15100</b>	psi	ISO 527
Strain at break, B	<b>7</b>	%	ISO 527
Nominal strain at break, tB	<b>7</b>	%	ISO 527
Charpy impact strength, +23°C	<b>42.3</b>	ftlb/in <sup>2</sup>	ISO 179/1eU
Type of failure	<b>C</b>	-	-
Charpy impact strength, -30°C	<b>46.1</b>	ftlb/in <sup>2</sup>	ISO 179/1eU
Type of failure	<b>C</b>	-	-
Charpy impact strength, -40°C	<b>45.2</b>	ftlb/in <sup>2</sup>	ISO 179/1eU
Type of failure	<b>C</b>	-	-
Charpy notched impact strength, +23°C	<b>9.99</b>	ftlb/in <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-
Charpy notched impact strength, -30°C	<b>6.66</b>	ftlb/in <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-
Charpy notched impact strength, -40°C	<b>6.18</b>	ftlb/in <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-

<b>Thermal properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Melting temperature	<b>351</b>	°F	ISO 11357-1/-3
Glass transition temperature, DSC	<b>108</b>	°F	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	<b>331</b>	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	<b>354</b>	°F	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	<b>351</b>	°F	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	<b>345</b>	°F	ISO 306

<b>Physical properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Density	<b>1.19</b>	g/cm <sup>3</sup>	ISO 1183
Moisture content	<b>0.021</b>	wt.-%	ISO 15512
Shore D hardness	<b>79</b>	-	ISO 7619-1

Rheological properties	dry	Unit	Test Standard
Melt volume-flow rate, MVR	<b>27</b>	cm <sup>3</sup> /10min	ISO 1133
Temperature	<b>275</b>	°C	-
Load	<b>5</b>	kg	-
Molding shrinkage, parallel	<b>0.3</b>	%	ISO 294-4, 2577
Molding shrinkage, normal	<b>0.8</b>	%	ISO 294-4, 2577
Mold temperature	<b>176</b>	°F	-
Melt temperature	<b>500</b>	°F	-
Flow length, flow spiral	<b>17.5</b>	in	Evonik standard
Flow front velocity, flow spiral	<b>37.4</b>	in/s	Evonik standard
Flow cross section	<b>6 x 2</b>	mm <sup>2</sup>	Evonik standard
Mold temperature, flow spiral	<b>482</b>	°F	Evonik standard
Melt temperature, flow spiral	<b>176</b>	°F	Evonik standard
Injection pressure, flow spiral	<b>21800</b>	psi	Evonik standard
Flow length, flow spiral	<b>21.9</b>	in	Evonik standard
Flow front velocity, flow spiral	<b>37.4</b>	in/s	Evonik standard
Flow cross section	<b>6 x 2</b>	mm <sup>2</sup>	Evonik standard
Mold temperature, flow spiral	<b>482</b>	°F	Evonik standard
Melt temperature, flow spiral	<b>176</b>	°F	Evonik standard
Injection pressure, flow spiral	<b>29000</b>	psi	Evonik standard

Polymer analytics	dry	Unit	Test Standard
Corrected Viscosity number	<b>166</b>	cm <sup>3</sup> /g	ISO 307, 1157, 1628
Rel. solution viscosity	<b>1.83</b>	-	ISO 307
Amino end group	<b>57</b>	mmol/kg	Evonik standard
Carboxyl end group	<b>&lt;20</b>	mmol/kg	Evonik standard

**Characteristics**

**Applications**

Quick-connectors

**Special Characteristics**

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

**Features**

Non-corrosive

**Color**

Black

**Additives**

Light stabilizer

**Delivery form**

Cylindrical pellets

**Chemical Resistance**

Fuel resistance

<b>Processing Recommendation Injection Molding</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Pre-drying - Temperature	<b>176 - 212</b>	°F	-
Pre-drying - Time	<b>2 - 4</b>	h	-
Processing humidity	<b>≤0.1</b>	%	-
Melt temperature	<b>464 - 536</b>	°F	-
Mold temperature	<b>140 - 212</b>	°F	-
Feed temperature	<b>104 - 140</b>	°F	-
Zone 1	<b>500</b>	°F	-
Zone 2	<b>491</b>	°F	-
Zone 3	<b>482</b>	°F	-
Zone 4	<b>122</b>	°F	-
Nozzle temperature	<b>491</b>	°F	-
Screw speed	<b>127</b>	rpm	-
Circumferential speed	<b>1.97 - 7.87</b>	in/s	-
Back pressure	<b>43.5 - 116</b>	psi	-
Holding pressure	<b>1020</b>	psi	-