# Omnix® LF-4050 BK 000

High Performance Polyamide

Solvay Specialty Polymers

## Message:

Omnix® LF-4050 BK 000 is a 50% long glass fiber reinforced, easy-flowing HPPA which can be processed on most injection molding machines.
This material achieves extremely high mechanical and thermal properties, in combination with ease of processing and fast cycle times. It exhibits high strength, stiffness and impact strength at high temperatures; excellent creep and fatigue resistance; isotropic mechanical properties and reduced isotropic shrinkage; high shear strength and high burst pressure; and an excellent surface finish.

| General Information | | | |
|---|---|---|---|
| Filler / Reinforcement | Long glass fiber, 50% filler by weight | | |
| Features | Low CLTE<br>Low warpage<br>Rigidity, high<br>Rigidity, high<br>High tensile strength<br>Insulation<br>Impact resistance, high<br>Good creep resistance<br>Fatigue resistance<br>Hot water formability | | |
| Uses | Gear<br>Aircraft applications<br>Application in Automobile Field<br>Car dashboard | | |
| Appearance | Black | | |
| Forms | Particle | | |
| **Physical** | **Nominal Value** | **Unit** | **Test Method** |
| Density | 1.59 | g/cm³ | ISO 1183 |
| shrinkage-Flow [1] | 0.10 | % | Internal method |
| Water Absorption (Equilibrium, 23°C, 50% RH) | 1.4 | % | ISO 62 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus (23°C) | 17000 | MPa | ISO 527-2 |
| Tensile Stress (Break, 23°C) | 265 | MPa | ISO 527-2 |
| Tensile Strain (Break) | 2.1 | % | ISO 527-2 |
| Flexural Modulus (23°C) | 16000 | MPa | ISO 178 |
| Flexural Stress (23°C) | 360 | MPa | ISO 178 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |

| | | | |
|---|---|---|---|
| Charpy Notched Impact Strength (23°C) | 35 | kJ/m² | ISO 179 |
| Charpy Unnotched Impact Strength (23°C) | 90 | kJ/m² | ISO 179 |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |
| Heat Deflection Temperature | | | |
| 0.45 MPa, not annealed | 260 | °C | ISO 75-2/B |
| 1.8 MPa, not annealed | 255 | °C | ISO 75-2/A |
| CLTE - Flow | 2.0E-5 | cm/cm/°C | ISO 11359-2 |
| Thermal Conductivity | 0.32 | W/m/K | ISO 22007 |
| **Electrical** | **Nominal Value** | **Unit** | **Test Method** |
| Dielectric Strength (2.00 mm) | 35 | kV/mm | IEC 60243-1 |
| Comparative Tracking Index | 600 | V | IEC 60112 |
| Surface Resistivity | 1.0E+13 | ohms/sq | ASTM D257 |
| **Injection** | **Nominal Value** | **Unit** | |
| Drying Temperature | 80 | °C | |
| Drying Time | 4.0 - 12 | hr | |
| Suggested Max Moisture | 0.10 | % | |
| Suggested Max Regrind | 20 | % | |
| Rear Temperature | 280 - 300 | °C | |
| Middle Temperature | 285 - 300 | °C | |
| Front Temperature | 285 - 300 | °C | |
| Nozzle Temperature | 285 - 300 | °C | |
| Processing (Melt) Temp | < 320 | °C | |
| Mold Temperature | 80 - 140 | °C | |

**Injection instructions**

Pre-Drying -- Since polyamides are hygroscopic materials as well as sensitive to moisture during processing, this product should always be pre-dried. At a humidity content above 0.08%, the material will begin to degrade. Recommended drying time is 4 hours at 120°C in dry-air dryer.Regrind -- Regrind of highly filled thermoplastic materials, such as this material, should only be recycled with special care. The regrind content must never exceed 20% and only regrind of optimum quality should be used. In any case, part properties should be checked.

**NOTE**

| | |
|---|---|
| 1. | Tested in accordance with S.O.P. methods |



## Recommended distributors for this material

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