# Omnix® FC-9050

High Performance Polyamide

Solvay Specialty Polymers

## Message:

Omnix® FC-9050 is a 50% glass-fiber reinforced high-performance polyamide. It is hot-water moldable and intended for use in components requiring superior mechanical properties even after moisture absorption.
Omnix® FC-9050 is characterized by high stiffness and strength, very good impact properties, good dimensional stability and high flow properties. This material is an economical alternative for food service applications using die-cast alloys.
Omnix® FC-9050 is approved for food contact and meets FDA regulations for Omnix® FC-9050 NT 000 (natural) and Omnix® FC-9050 BK 000 (black) based on clearances granted by FCN 001242 for repeated use food contact applications with all food types, under FDA conditions of use B through H as described in Tables 1 and 2 of 21 CFR 176.170(c).
It processes readily using conventional injection molding machines and methods. Water-cooled molds are suitable for use with this grade.
Black: Omnix® FC-9050 BK 000
Natural: Omnix® FC-9050 NT 000

| General Information | |
|---|---|
| Filler / Reinforcement | Glass fiber reinforced material, 50% filler by weight |
| Features | Good dimensional stability<br>Rigidity, high<br>High strength<br>Impact resistance, good<br>Sprayable<br>Fast molding cycle<br>High liquidity<br>Hot water formability<br>Excellent appearance |
| Uses | Electrical appliances<br>Food service sector |
| RoHS Compliance | RoHS compliance |
| Appearance | Black<br>Natural color |
| Forms | Particle |
| Processing Method | Water temperature mold injection molding<br>Injection molding |
| Part Marking Code (ISO 11469) | >PAMXD6/66-GF50 |

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Specific Gravity | 1.60 | g/cm³ | ASTM D792 |
| Molding Shrinkage [1] | | | Internal method |
| Vertical flow direction | 0.50 | % | Internal method |

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|---|---|---|---|
| Flow direction | 0.20 | % | Internal method |
| Water Absorption (23°C, 24 hr) | 0.27 | % | ISO 62 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus | 17000 | MPa | ISO 527-2 |
| Tensile Stress (Yield) | 235 | MPa | ISO 527-2 |
| Tensile Strain (Break) | 2.1 | % | ISO 527-2 |
| Flexural Modulus | 1500 | MPa | ISO 178 |
| Flexural Stress | 340 | MPa | ISO 178 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Notched Izod Impact | 13 | $kJ/m^2$ | ISO 180/1A |
| Unnotched Izod Impact Strength | 75 | $kJ/m^2$ | ISO 180 |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |
| Heat Deflection Temperature (1.8 MPa, Unannealed) | 248 | °C | ISO 75-2/A |
| Melting Temperature | 260 | °C | ASTM D3418 |
| **Flammability** | **Nominal Value** | | **Test Method** |
| Flame Rating | HB | | UL 94 |
| **Additional Information** | | | |
| Typical values shown tested on Dry as Molded samples.Standard Packaging and Labeling:<br>Omnix® FC-9050 resin is packaged in foil lined, multiwall paper bags containing 25 kg (55 pounds) of material. Individual packages will be plainly marked with the product number, the color, the lot number, and the net weight. | | | |
| **Injection** | **Nominal Value** | **Unit** | |
| Drying Temperature | 80.0 | °C | |
| Drying Time | 4.0 - 12 | hr | |
| Rear Temperature | 250 | °C | |
| Front Temperature | 285 | °C | |
| Processing (Melt) Temp | 275 - 290 | °C | |
| Mold Temperature | 80.0 - 120 | °C | |
| **Injection instructions** | | | |

Drying:
Omnix® FC-9050 resin is shipped in moisture-resistant packages at moisture levels according to specifications. It should be dried before molding because excessive moisture content will result in reduced mechanical properties and processing issues, such as excessive nozzle drooling, foaming and splay visible on the molded parts.
Recommended drying conditions are as follows:
Type of drier: Desiccant
Temperature: 80°C (175°F)
Time: 4-12 hours
Dew point: -30°C (-22°F) or lower
Polyamides oxidize in the presence of oxygen at high temperatures. Therefore drying temperatures above 80°C should be avoided, particularly for light colors or color-controlled parts.
Injection Molding:
Omnix® FC-9050 resin can be readily injection molded in most screw injection molding machines. A general purpose screw is recommended, with minimum back pressure. The melt temperature should be between 275°C and 290°C (527°F and 554°F). Generally this can be achieved with barrel temperatures from 250°C (482°F) in the rear zone gradually increasing to 285°C (545°F) in the front zone. Mold temperature should be between 80° and 120°C (176° and 248°F).
Set injection pressure to give rapid injection. Adjust holding pressure to one-half injection pressure. Set hold time to maximize part weight. Transfer from injection to hold pressure at the screw position just before the part is completely filled.
Storage:
Omnix® compounds are shipped in moisture-resistant packages at moisture levels according to specifications. Sealed, undamaged bags should be preferably stored in a dry room at a maximum temperature of 50°C (122°F) and should be protected from possible damage. If only a portion of a package is used, the remaining material should be transferred into a sealable container. It is recommended that Omnix® resins be dried prior to molding following the recommendations found in this datasheet and/or in the Omnix® processing guide.

NOTE

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| 1. | Solvay test method. The shrinkage rate will change according to the design and processing conditions of components. Please contact Solvay's technical representative for more information. |



Recommended distributors for this material

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