

## Technical Data

### Product Description

Omnix® 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® 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 to die-cast alloys for application in automotive, electrical appliance and mechanical equipment. It processes readily using conventional injection molding machines and methods. Water-cooled molds are suitable for use with this grade.

- Black: Omnix® 9050 BK 000
- Natural: Omnix® 9050 NT 000

### General

Material Status	• Commercial: Active
Literature <sup>1</sup>	• <a href="#">Technical Datasheet</a>
Search for UL Yellow Card	• <a href="#">Syensqo</a> • <a href="#">Omnix®</a>
Availability	• Asia Pacific • Europe • North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight
Features	• Fast Molding Cycle • Good Surface Finish • High Strength • Good Dimensional Stability • High Flow • Hot Water Moldability • Good Impact Resistance • High Stiffness • Paintable
Uses	• Automotive Applications • Electrical/Electronic Applications • Machinery Maintenance/Repair
RoHS Compliance	• RoHS Compliant
Appearance	• Black • Natural Color
Forms	• Pellets
Processing Method	• Injection Molding • Water-Heated Mold Injection Molding
Part Marking Code (ISO 11469)	• >PAMXD6/66-GF50<

Physical	Nominal Value Unit	Test Method
Density / Specific Gravity	1.60 g/cm <sup>3</sup>	ASTM D792
Molding Shrinkage <sup>3</sup>		Internal Method
Across Flow	0.50 %	
Flow	0.20 %	
Water Absorption (24 hr, 23°C)	0.27 %	ISO 62

Mechanical	Nominal Value Unit	Test Method
Tensile Modulus	17000 MPa	ISO 527-1
Tensile Stress (Yield)	235 MPa	ISO 527-2
Tensile Strain (Break)	2.1 %	ISO 527-2
Flexural Modulus	15000 MPa	ISO 178
Flexural Stress	340 MPa	ISO 178

Impact	Nominal Value Unit	Test Method
Notched Izod Impact Strength	13 kJ/m <sup>2</sup>	ISO 180/1A
Unnotched Izod Impact Strength	75 kJ/m <sup>2</sup>	ISO 180



Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load 1.8 MPa, Unannealed	248 °C	ISO 75-2/A
Melting Temperature	260 °C	ASTM D3418
Flammability	Nominal Value Unit	Test Method
Flame Rating	HB	UL 94

#### Additional Information

Typical values shown tested on Dry as Molded samples.

Standard Packaging and Labeling:

- Omnix® 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 °C
Drying Time	4.0 to 12 hr
Rear Temperature	250 °C
Front Temperature	285 °C
Processing (Melt) Temp	275 to 290 °C
Mold Temperature	80 to 120 °C

#### Injection Notes

Drying:

- Omnix® 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® 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.

#### Notes

<sup>1</sup> These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

<sup>2</sup> Typical properties: these are not to be construed as specifications.

<sup>3</sup> Solvay Test Method. Shrink rates can vary with part design and processing conditions. Please consult a Solvay Technical Representative for more information.

