Omnix® 9050

high performance polyamide

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		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight		
Features	• Fast Molding Cycle • Good Dimensional Stability • Good Impact Resistance	• Good Surface Finish • High Flow • High Stiffness	• High Strength • Hot Water Moldability • 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	Typical Value	Unit	Test method
Specific Gravity	1.60		ASTM D792
Molding Shrinkage [1]			Internal Method
Across Flow	0.50	%	
Flow	0.20	%	
Water Absorption (23°C, 24 hr)	0.27	%	ISO 62

Mechanical	Typical 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	15000	MPa	ISO 178
Flexural Stress	340	MPa	ISO 178

Impact	Typical Value	Unit	Test method
Notched Izod Impact Strength	13	kJ/m²	ISO 180/1A
Unnotched Izod Impact Strength	75	kJ/m²	ISO 180

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Thermal	Typical Value	Unit	Test method
Heat Deflection Temperature			ISO 75-2/A
1.8 MPa, Unannealed	248	°C	
Melting Temperature	260	°C	ASTM D3418

Flammability	Typical 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	Typical Value	Unit
Drying Temperature	80.0	°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	80.0 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.

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Notes

Typical properties: these are not to be construed as specifications.

[1] Solvay Test Method. Shrink rates can vary with part design and processing conditions. Please consult a Solvay Technical Representative for more information.

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