

Omnix® 4020

high performance polyamide

Omnix® 4020 is a 20% glass-fiber reinforced, heat-stabilized, high-performance polyamide (HPPA). It is particularly suited for replacing die-cast metal in a variety of mechanical applications and components used in automotive, consumer goods, E/E, and construction. Components injection molded from Omnix® 4020 display

exceptional mechanical properties and excellent surface appearance even after moisture adsorption.

- Black: Omnix® 4020 BK 000
- Natural: Omnix® 4020 NT 000

General

Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• North America
Filler / Reinforcement	• Glass Fiber, 20% 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 Electronics • 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)	• >(PA+PPA)-GF20<	

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.32		ASTM D792

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	7600	MPa	ISO 527-2
Tensile Stress (Yield)	140	MPa	ISO 527-2
Tensile Strain (Break)	2.6	%	ISO 527-2
Flexural Modulus	6700	MPa	ISO 178
Flexural Stress	200	MPa	ISO 178

Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength	5.0	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength	30	kJ/m ²	ISO 179

Thermal	Typical Value	Unit	Test method
Melting Temperature	260	°C	ISO 11357-3

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Additional Information

- Typical values shown tested on Dry as Molded samples.
- Standard Packaging and Labeling: Omnix® 4020 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	°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® 4020 resin is 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. 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® 4020 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.

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