

# Kalix® 9850

## high performance polyamide

Kalix® 9850 is a 50% glass-fiber reinforced high-performance polyamide. It is hot-water moldable and intended for use in components requiring superior mechanical properties and excellent surface quality.

Kalix® 9850 is characterized by high stiffness and strength, very good impact properties, good dimensional stability, and excellent surface finish.

Kalix® 9850 exhibits an excellent combination of high flow, low flash tendency and fast cycle time which makes it a cost-competitive option for thin-walled parts produced in large quantities, such as structural parts in mobile electronic devices.

- Black: Kalix® 9850 BK 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 • Platable
Uses	• Cell Phones • Electrical Parts	• Electrical/Electronic Applications • Thin-walled Parts
RoHS Compliance	• RoHS Compliant	
Appearance	• Black	• Colors Available
Forms	• Pellets	
Processing Method	• Injection Molding	• Water-Heated Mold Injection Molding

### Physical

	Typical Value	Unit	Test method
Density / Specific Gravity	1.60		ASTM D792
Molding Shrinkage <sup>1</sup>			Internal Method
Across Flow	0.60	%	
Flow	0.15	%	
Water Absorption (24 hr, 23°C)	0.39	%	ASTM D570

### Mechanical

	Typical Value	Unit	Test method
Tensile Modulus	20000	MPa	ISO 527-2
Tensile Stress (Yield)	290	MPa	ISO 527-2
Tensile Strain (Break)	2.7	%	ISO 527-2
Flexural Modulus	19000	MPa	ISO 178
Flexural Stress (3.5% Strain)	425	MPa	ISO 178

### Impact

	Typical Value	Unit	Test method
Notched Izod Impact Strength	18	kJ/m <sup>2</sup>	ISO 180/1A
Unnotched Izod Impact Strength	95	kJ/m <sup>2</sup>	ISO 180

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

Electrical	Typical Value	Unit	Test method
Dielectric Constant <sup>2</sup> (2.40 GHz)	3.86		ASTM D2520
Dissipation Factor <sup>2</sup> (2.40 GHz)	0.011		ASTM D2520

### Additional Information

Typical values shown tested on Dry as Molded samples.

#### Standard Packaging and Labeling:

- Kalix® 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.

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Injection	Typical Value	Unit
Drying Temperature	80	°C
Drying Time	4.0 to 12	hr
Suggested Max Moisture	0.090	%
Rear Temperature	250	°C
Front Temperature	280	°C
Processing (Melt) Temp	285 to 305	°C
Mold Temperature	80 to 120	°C

### Injection Notes

#### Storage:

- Kalix® 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 Kalix® resins be dried prior to molding following the recommendations found in this datasheet and/or in the Kalix® processing guide.

#### Drying:

- Kalix® compounds are supplied in sealed bags. 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.
- Use of a desiccant dryer with -40°C dewpoint is strongly suggested to ensure Kalix® material has reached optimum moisture content before processing.

#### Injection Molding:

- Kalix® 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 285°C and 305°C (545°F and 580°F). Generally this can be achieved with barrel temperatures from 250°C (482°F) in the rear zone gradually increasing to 280°C (536°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.

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#### Notes

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

<sup>1</sup> Solvay Test Method. Shrink rates can vary with part design and processing conditions. Please consult a Solvay Technical Representative for more information.

<sup>2</sup> Method B

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