

Kalix® 9950

high performance polyamide

Kalix® 9950 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® 9950 is characterized by high stiffness and strength, very good impact properties, good dimensional stability, low warpage behavior and excellent surface finish. It can be successfully plated, for example with non conductive vacuum metallization, or painted with soft touch or UV top coat paints. Please contact your Solvay Specialty Polymers sales representative for more information on suitable plating and painting systems.

Kalix® 9950 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® 9950 BK 000
- White: Kalix® 9950 WH 000
- Natural: Kalix® 9950 NT 000

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Glass Fiber, 50% Filler by Weight		
Features	<ul style="list-style-type: none"> • Fast Molding Cycle • Good Dimensional Stability • Good Impact Resistance • Good Surface Finish 	<ul style="list-style-type: none"> • High Flow • High Stiffness • High Strength • Hot Water Moldability 	<ul style="list-style-type: none"> • Low Warpage • Paintable • Platable
Uses	<ul style="list-style-type: none"> • Cell Phones • Electrical Parts 	<ul style="list-style-type: none"> • Electrical/Electronic Applications • Thin-walled Parts 	
RoHS Compliance	• RoHS Compliant		
Appearance	<ul style="list-style-type: none"> • Black • Colors Available 	<ul style="list-style-type: none"> • Natural Color • White 	
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	0.32	%	
Flow	0.13	%	
Water Absorption (23°C, 24 hr)	0.37	%	ISO 62

Mechanical

	Typical Value	Unit	Test method
Tensile Modulus	18500	MPa	ISO 527-2
Tensile Stress (Yield)	245	MPa	ISO 527-2
Tensile Strain (Break)	2.3	%	ISO 527-2
Flexural Modulus	15900	MPa	ISO 178

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Mechanical	Typical Value	Unit	Test method
Flexural Stress (3.5% Strain)	379	MPa	ISO 178

Impact	Typical Value	Unit	Test method
Notched Izod Impact Strength	15	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength	68	kJ/m ²	ISO 180

Thermal	Typical Value	Unit	Test method
Heat Deflection Temperature			
0.45 MPa, Unannealed	262	°C	ISO 75-2/B
1.8 MPa, Unannealed	254	°C	ISO 75-2/A
Melting Temperature	260	°C	ASTM D3418

Electrical	Typical Value	Unit	Test method
Dielectric Constant ²			ASTM D2520
1.00 GHz	4.15		
2.40 GHz	4.15		
Dissipation Factor ²			ASTM D2520
1.00 GHz	0.011		
2.40 GHz	0.011		

Flammability	Typical Value	Unit	Test method
Flame Rating (0.600 mm, All colors)	HB		UL 94

Additional Information

Typical values shown tested on Dry as Molded samples.

Standard Packaging and Labeling:

- Kalix 9950 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	280	°C
Processing (Melt) Temp	285 to 305	°C
Mold Temperature	80.0 to 120	°C

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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 9950 is 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.
- 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:

- Kalix 9950 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.

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.

² Method B

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