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 Syensqo 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 002
- White: Kalix® 9950 WH 003
- 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	• Fast Molding Cycle • Good Dimensional Stability • Good Impact Resistance • Good Surface Finish • High Flow • High Stiffness	• High Strength • Hot Water Moldability • Low Warpage • Paintable • Platable
Uses	• Cell Phones • Electrical Parts	• Electrical/Electronic Applications • Thin-walled Parts
RoHS Compliance	• RoHS Compliant	
Appearance	• Black • Colors Available	• Natural Color • White
Forms	• Pellets	
Processing Method	• Injection Molding	• Water-Heated Mold Injection Molding

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Physical	Dry	Conditioned	Unit	Test method
Density / Specific Gravity	1.60	--		ASTM D792
Molding Shrinkage [1]				Internal Method
Across Flow	0.32	--	%	
Flow	0.13	--	%	
Water Absorption				
24 hr, 23°C	0.37	--	%	ASTM D570
Saturation, 23°C	4.0	--	%	Internal Method
Equilibrium, 23°C, 50% RH	1.4	--	%	Internal Method

Mechanical	Dry	Conditioned	Unit	Test method
Tensile Modulus				
--	18500	--	MPa	ISO 527-1
--	--	14800	MPa	ISO 527-2
Tensile Stress				
Yield	245	--	MPa	ISO 527-2
Break	194	--	MPa	ISO 527-5
Tensile Strain (Break)	2.3	2.5	%	ISO 527-2
Flexural Modulus	15900	--	MPa	ISO 178
Flexural Stress (3.5% Strain)	379	--	MPa	ISO 178

Impact	Dry	Conditioned	Unit	Test method
Charpy Notched Impact Strength	18	18	kJ/m²	ISO 179
Charpy Unnotched Impact Strength	87	94	kJ/m²	ISO 179
Notched Izod Impact Strength	15	--	kJ/m²	ISO 180/1A
Unnotched Izod Impact Strength	68	--	kJ/m²	ISO 180

Thermal	Dry	Conditioned	Unit	Test method
Deflection Temperature Under Load				
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	Dry	Conditioned	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	--		
Comparative Tracking Index	--	600	V	IEC 60112

Flammability	Dry	Conditioned	Unit	Test method
Flame Rating (0.60 mm, All colors)	HB	--		UL 94

Additional Information

Dry	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.

Injection	Dry	Unit
Drying Temperature	80 to 100	°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.

- Using higher drying temperatures will have a negative impact on color and for color sensitive applications we recommend staying at 80°C drying temperature.

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.

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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Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

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