SYENSQO

Kalix® 9945 HFFR

high performance polyamide

Kalix® 9945 HFFR is a 45% glass-fiber reinforced, halogen-free flame retardant High Performance Polyamide. It is hot-water moldable and intended for use in components requiring superior mechanical properties, excellent surface quality and excellent flammability rating.

- Black: Kalix® 9945 BK000 HFFR

General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• North America
Filler / Reinforcement	• Glass Fiber, 45% 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	• Contact Manufacturer	
Appearance	• Black • Colors Available	• Natural Color
Forms	• Pellets	
Processing Method	• Injection Molding	• Water-Heated Mold Injection Molding

Physical	Typical Value	Unit	Test method
Density	1.58	g/cm³	ISO 1183
Molding Shrinkage [1]			Internal Method
Across Flow	0.50	%	
Flow	0.10	%	
Water Absorption (24 hr, 23°C)	0.37	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	17000	MPa	ISO 527-1
Tensile Stress (Yield)	190	MPa	ISO 527-2
Tensile Strain (Break)	1.9	%	ISO 527-2
Flexural Modulus	15000	MPa	ISO 178
Flexural Stress (3.5% Strain)	280	MPa	ISO 178
Flexural Strain at Break	2.5	%	ISO 178

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Impact	Typical Value	Unit	Test method
Notched Izod Impact Strength	12	kJ/m²	ISO 180/1A
Unnotched Izod Impact Strength	45	kJ/m²	ISO 180

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	257	°C	ISO 75-2/B
1.8 MPa, Unannealed	229	°C	ISO 75-2/A

Electrical	Typical Value	Unit	Test method
Dielectric Constant [2] (2.40 GHz)	4.20		ASTM D2520
Dissipation Factor [2] (2.40 GHz)	0.010		ASTM D2520

Flammability	Typical Value	Unit	Test method
Flame Rating (0.35 mm, Black)	V-0		UL 94

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.

Injection	Typical Value	Unit
Drying Temperature	80 to 100	°C
Drying Time	4.0 to 12	hr
Suggested Max Moisture	0.070	%
Rear Temperature	265 to 270	°C
Front Temperature	280 to 290	°C
Processing (Melt) Temp	280 to 290	°C
Mold Temperature	80 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® 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.

- Drying temperatures of up to 100°C may be used for dark colored resin (such as black) to achieve shorter drying times, if necessary. For lighter colored resin, 80°C drying temperature is recommended to minimize the risk of oxidative discoloring.

- 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:

- 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