Kalix® 2930 HFFR
high performance polyamide

Kalix® 2930 HFFR is a bio-sourced polyamide-based material specifically formulated to meet UL 94V2 @ 0.4 mm requirements for electronic devices. The material uses an advanced halogen-free flame retardant package expressly designed to minimize blooming, plate out, and other process related issues commonly associated with flame retardant materials.

- Black: Kalix® 2930 HFFR BK 000

General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific	• North America
Filler / Reinforcement	• Glass Fiber	
Features	• Fast Molding Cycle • Flame Retardant • 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	
Forms	• Pellets	
Processing Method	• Injection Molding	• Water-Heated Mold Injection Molding

Physical	Typical Value	Unit	Test method
Specific Gravity	1.41		
Molding Shrinkage [1]			Internal Method
Across Flow	0.70	%	
Flow	0.20	%	
Water Absorption (24 hr, 23°C)	0.17	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	10600	MPa	ISO 527-1
Tensile Stress	130	MPa	ISO 527-2
Tensile Strain (Break)	2.4	%	ISO 527-2
Flexural Modulus	10000	MPa	ISO 178
Flexural Stress	200	MPa	ISO 178
Flexural Strain at Break	2.6	%	ISO 178

Impact	Typical Value	Unit	Test method
Notched Izod Impact Strength	9.0	kJ/m²	ISO 180/1A
Unnotched Izod Impact Strength	55	kJ/m²	ISO 180

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ISO 75-2/A
1.8 MPa, Unannealed	206	°C	
Glass Transition Temperature	65.0	°C	DMA
Melting Temperature	223	°C	

Flammability	Typical Value	Unit	Test method
Flame Rating (0.40 mm)	V-2		UL 94

Additional Information

- Typical values shown tested on Dry as Molded samples.

- Standard Packaging and Labeling: Kalix® HFFR 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	255 to 265	°C
Front Temperature	265 to 280	°C
Processing (Melt) Temp	260 to 300	°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.

- 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.

Tooling:

- This material is not typically recommended for use in hot runner systems due to the possibility of tooling corrosion and wear. If hot runner systems must be used please engage a tooling vendor having adequate experience with flame-retardant, glass-filled polyamides. Ensure that appropriate corrosion-resistant and wear-resistant tool steels and coatings are utilized to increase tooling life cycles.

- Excessive pellet moisture, melt temperature, residence times will accelerate the possibility of corrosion. It is critical that recommended processing parameters are followed to minimize corrosion potential.

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.

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