

Sun Ray HF Conductive Silver Ink

HF Conductive Silver ink was developed for use as a screen-printed silver ink for printed electronic applications such as membrane switch circuits.

Advantages

- Stable low resistance traces on Polyester and FR-1 & FR-2 substrates
- High durability
- Lower processing steps giving reduced cycle time
- Very flexible ink after cure

Material Specifications

Viscosity:	26,000 cps typical @ 25°C, Brookfield Model RV™, #6 Spindle at 20 RPM, can be customized
Shelf Life:	Three months refrigerated
Substrate:	Treated or untreated polyester, FR-1 or FR-2 rigid PWBs
Resistivity:	Less than 20 milli-ohms per square per mil thick
Temp. Coeff of Resistance (100°F - 260°F):	0.00172 ohm/ ohm/°F
Resistivity after crease test:	Less than 20% change
Percent Solids:	58% +/- 5%
Adhesion:	Minimal ink clinging to Scotch 600 tape
Operating Temperature:	-40°C to 85°C
Connector Pressure:	Unaffected by ZIF or crimp type contacts
HASL:	Not applicable
Cleanability:	Stable to aqueous detergent/Freon Cleaning
Solderability:	Not solderable but will withstand solder immersion covered



Processing Guidelines

Screening Equipment:	Semi or fully automatic
Printability:	Four hours or more ink residence time on screen
Screen Type:	Polyester, stainless steel
Screen Mesh:	Depends on application
Cured Ink Thickness:	0.0003 inch dry
Coverage	460 square feet/gallon/mil
Clean-up Solvent:	DBE solvent should be used for clean up
Thinner:	DBE-1
Cure Conditions:	Oven dependent - Optimum on 5 mil Polyester hot platen with forced air (290°F for 2 minutes and 30 seconds total cure time)
Substrate Cleaner:	Aqueous detergent

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Reliability Data

Characteristic	Test Condition	Results
Thermal Shock	-40°C to 70°C	No issues
Dry Heat	70°C for 500 hours	No issues
Low Temperature	-30°C for 500 hours	No issues
Temperature/Humidity	55°C/95% Rh - 85°C/50% Rh @ 70 days	No issues
Flowers of Sulfur	25 PPM - 65°C/85% Rh @240 days	No issues
Electrical Contact Testing	Room ambient	>1,000,000 cycles
Bend and Crease Test	Room ambient	Less than 2X change

Storage and Shelf Life

This polymeric ink should be stored refrigerated in unopened containers. Under these conditions the material will be useable for three months. Once opened the material should be used within two weeks and material on screens should not be put back in the partially used container.

Safety and Handling

This product contains organic solvents and materials. The following precautions should be exercised when handling this material:

- Use with adequate ventilation
- Avoid prolonged skin contact
- Avoid prolonged breathing of vapors
- If contact with skin occurs, wash affected area immediately with soap and water
- Dangerous if swallowed - do not consume

NOTE: The data contained on this data sheet are furnished for the information only and are believed to be reliable. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned on this data sheet and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and the use thereof. Xymox Technologies specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from the sale or use of Xymox Technologies products.

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