



Creative Materials, Inc.  
12 Willow Road  
Ayer, MA 01432

[www.creativematerials.com](http://www.creativematerials.com)

ISO 9001 CERTIFIED  
ISO 14001 CERTIFIED

T 978.391.4700  
F 978.391.4705

## 126-40(SP)

### FLEXIBLE SOLVENT RESISTANT ELECTRICALLY CONDUCTIVE FINE LINE EPOXY INK AND ADHESIVE

**DESCRIPTION:** 126-40(SP) is a single component, flexible, solvent-resistant, electrically conductive ink and adhesive that has been optimized for screen printing circuits with fine line widths and spacing. This product features excellent adhesion to ITO coated surfaces, polyimide, polyester, glass, polycarbonate, and other substrates and has virtually no bleed and minimal spreading, tailing, or stringing. This product is very resistant to methyl ethyl ketone and other aggressive solvents. It is also very resistant to flexing, scratching, and creasing. Some applications for 126-40(SP) include, but are not limited to, touch screen bus bars, solar cell grid lines, emi/rfi shielding of polyimide flexible circuits, polymer thick film circuitry, and membrane switches.

Property	Value	Units
Viscosity (CP-51 10/s, 25°C)	50,000 – 60,000	cps
Volume Resistivity (as low as*)	0.000038	$\Omega$ -cm
Sheet Resistivity (as low as*)	0.015	$\Omega$ /sq/mil
Specific Gravity	3.37	g/cc
Continuous operation temperature	-55 to +230	°C
Thermal Stability	Good to +280	°C
Solderable	No	-
Filler	Silver	-
% Silver (cured)	> 85	-
Hydrolytic Stability	Excellent	-
Solvent Resistance	Excellent	-

### CURE SCHEDULE AND CONDUCTIVITY:

Cure Temperature (°C)	Cure Time	Resistivity Achievable ( $\Omega$ /sq/mil)
125	30 min.	< 0.055
175	20 min.	< 0.015

**Note:** Cure times are suggestions and customers are advised to experiment for what works best in their application. Curing at temperatures above 230°C can substantially reduce the resistance of printed traces. For thinning and clean up, CMI thinner 124-13 is recommended.

**SAFETY & HANDLING:** Use with adequate ventilation. Keep away from sparks and open flames. Avoid prolonged contact with skin and breathing of vapors. Wash with soap and water to remove from skin.

**STORAGE:** Shelf life: 4 days at 25°C; 6 months at -20°C.

*All technical information is based on data obtained by CMI personnel and is believed to be reliable. No warranty is either expressed or implied with respect to suitability in particular application or possible infringements on patents.*

REVISION DATE: 07/08/24 REVISION: A



Creative Materials, Inc.  
12 Willow Road  
Ayer, MA 01432

[www.creativematerials.com](http://www.creativematerials.com)

ISO 9001 CERTIFIED  
ISO 14001 CERTIFIED

T 978.391.4700  
F 978.391.4705

## **Guidelines For Screen-Printing Creative Materials' Fine Line Conductive Inks**

Creative Materials fine line conductive inks should be thinned only as needed to print. Over-thinning material will lead to spreading during printing that will negatively affect minimum feature size. Creative Materials fine line conductive inks are supplied ready to print but may be thinned with the appropriate thinner specified on the data sheet. A sample of the appropriate thinner will be supplied with your sample order. Please consult with a technical representative to determine a compatible thinner for the ink in your process. When evaluating an ink, it is advised to only thin the amount of ink which is to be printed. Starting points for printing parameters are listed below. The customer is advised to experiment with the ink in their process to determine the optimum printing parameters.

- i. Recommended Screen Mesh
  - 1. 325 – 400 mesh stainless steel
  - 2. 255 – 355 mesh polyester
    - a. More open mesh counts will minimize potential for screen clogging, and dry in. Higher mesh counts will improve line definition and minimum feature size.
- ii. Recommended Emulsion Thickness
  - 1. 10 – 15 microns
    - a. Thinner emulsion will reduce spreading reducing minimum feature size. Thicker emulsions will lay down more material improving conductivity values.
- iii. Recommended Squeegee Hardness
  - 1. 70 – 90 Shore A
    - a. Harder squeegees will lay down less material, which will reduce spreading and reduce minimum feature size. Softer squeegees will lay down more material improving conductivity values.
- iv. Minimum Line Width/Spacing
  - 1. 0.004" / 0.004"
- v. Typical Dry Film Thickness
  - 1. 0.00025" – 0.001"

***All technical information is based on data obtained by CMI personnel and is believed to be reliable. No warranty is either expressed or implied with respect to suitability in particular application or possible infringements on patents.***

**REVISION DATE: 07/08/24 REVISION: A**