

RD0117F

High Resolution Printable Semi-Sinterable Silver Conductor

Product Description

ACI Alchemy Conductive Ink RD0117F is a semi-sintering silver-based conductor supplied at high viscosity for high resolution printed circuitry and producing flexible hybrid electronic devices on flexible or rigid substrates. ACI's Alchemy Conductive Inks offer the ease of use and processing of polymer thick film silvers, and the superior conductivity of nanoparticle based sintering inks. After curing, reflow soldering can be used for component attach using some low temperature solder pastes and/or by using specific substrates available from ACI. RD0117F should be compatible with most dielectric/insulator inks and solder mask materials.

Product Benefits

- Cost savings from reduced silver usage
- Enable SMD attach using low temperature solder pastes and substrates (PET)
- Enable higher power and current density applications
- Superior mechanical performance (flex and crease ability)
- High resolution printing without compromising conductivity or sheet resistance
- Higher speed curing than nanoinks
- Good low temperature performance

Typical Performance

Volume resistivity 150°C for 15 min in box oven	<0.003 Ω/square/mil <7.5 x 10 ⁻⁶ Ω·cm
Adhesion ¹	5B
U-flex and crease ability	Contact ACI for data related to your application

¹ Method based on ASTM D3359 Method B tested on 0.005" Melinex® ST506 PET

Typical Properties as Supplied

Physical State	Paste
Color	Silver
Viscosity ²	45 Pa·s
Density	4.02 g/mL
Percent Solids ³	83%
Shelf Life at 20°C	12 Months

Typical Processing Parameters

Deposition methods	Screen printing or syringe microdispense		
Ideal Curing Time and Temperatures	5-15 min in box oven at 150°C ≤5 min in industrial conveyor oven at 150°C		
Recommended Screen Meshes Mesh counts are in threads per inch (TPI)	420 TPI/20 µm V-Screen Next 11-18 µm thread stainless steel & tungsten meshes		
Emulsion Over Mesh (EOM) Thickness	6 µm or minimum recommended for mesh		
Theoretical Dry Film Thickness (w and w/o EOM) ⁴	420/20 µm VSN	~8 µm	~5 µm
	730/13 µm SS	~8 µm	~5 µm
	430/13 µm W	~11 µm	~8 µm
Coverage for Recommended meshes w and w/o EOM ⁴	420/20 µm VSN	~14 m ² /kg	~21 m ² /kg
	730/13 µm SS	~15 m ² /kg	~23 m ² /kg
	430/13 W	~10 m ² /kg	~14 m ² /kg
Thinner/Diluent	RD0135		
Storage	In sealed containers provided in cool dry location		
Clean Up Solvents	Acetone, MEK, and similar solvents		

² Measured on Anton Paar MCR302 at 10⁻¹ sec shear rate at 25°C after preshearing at 100⁻¹ sec for 5 min

³ 150 °C for 120 minutes in box oven

⁴ Estimates relevant for finer and coarser feature printing respectively



Contact ACI

Email: info@acimaterials.com

Phone: 805-324-4486

Website: www.acimaterials.com

Mailing and Shipment Address

ACI Materials, Inc.

44 Castilian Drive

Goleta, CA 93117

Caution

Proper industrial safety precautions should be exercised in using these products. Use with adequate ventilation. Avoid prolonged contact with skin or inhalation of any vapors emitted during use or heating of these compositions. The use of safety eye goggles, gloves or hand protection creams is recommended. Wash hands or skin thoroughly with soap and water after using these products. Do not eat or smoke in areas where these materials are used. Refer to appropriate MSDS sheet.

Disclaimer

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