RD0142A

High Resolution Printable Semi-Sinterable Silver Conductor

Product Description

ACI Alchemy Conductive Ink RD0142A 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 RD0142A 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
The product information and recommendations contained herein are based on data obtained by tests we believe to be accurate, but the accuracy and completeness thereof is not guaranteed. No warranty is expressed or implied regarding the accuracy of these data, the results obtained from the use hereof, or that any such use will not infringe any patent. Applied Cavitation, Inc. assumes no liability for any injury, loss, or damage, direct or consequential arising out of its use by others. This information is furnished upon the condition that the person receiving it shall make their own tests to determine the suitability thereof for their particular use, before using it. User assumes all risk and liability whatsoever in connection with their intended use. Applied Cavitation's only obligation shall be to replace such quantity of the product proved defective.