RD0117B

Printable Semi-Sinterable Silver Conductor

Product Description

ACI Alchemy Conductive Ink RD0117B is a semi-sintering silver-based conductor for printed circuitry and flexible hybrid electronic devices on flexible or rigid substrates. ACI 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. RD0117B 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]	15 Pa·s		
Density	3.39 g/mL		
Percent Solids[3]	79%		
Shelf Life at 20°C	12 Months		
Typical Processing Parameters			
Deposition methods	Screen printing		
Ideal Curing Time and Temperatures	5-15 min in box oven at 150°C ≤5 min in industrial conveyor oven at 150°C, ≤3 min with IR		
Recommended Screen Meshes Mesh counts are in threads per inch (TPI)	380/34 µm, 460/27 µm, high TPI PET meshes for silver cost reduction 420/20 µm V-Screen Next for better resolution		
Emulsion Over Mesh (EOM) Thickness	6 µm or minimum recommended for mesh		
Theoretical Dry Film Thickness (w and w/o EOM)[4]	380/34 µm PET	~4 µm	~2 µm
	460/27 µm PET	~5 µm	~3 µm
	420/20 µm VSN	~6 µm	~4 µm
Coverage for Recommended meshes w and w/o EOM[4]	380/34 µm PET	~25 m^2/kg	~49 m^2/kg
	460/27 µm PET	~23 m^2/kg	~42 m^2/kg
	420/20 µm VSN	~16 m^2/kg	~24 m^2/kg
Thinner/Diluent	DBE-5		
Storage	In sealed containers provided in cool dry location		
Clean Up Solvents	Acetone, MEK, and silimar 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

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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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