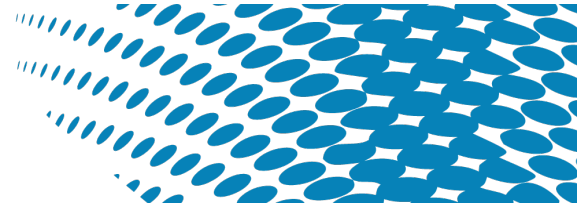


FS0117

Semi-Sintered Silver Conductor



Product Description

ACI Alchemy Conductive Ink FS0117 is a semi-sintering silver-based conductor for printed circuitry and flexible hybrid electronics 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 sintering inks. After curing, reflow soldering can be used for component attachment using low temperature solder pastes and/or by using specific substrates available from ACI. FS0117 is compatible with most insulator inks and solder mask materials.

Product Benefits

- Cost savings from low resistivity for reduced silver usage
- Enables SMD attachment using low temperature solder pasted and substrates (PET)
- Enables higher power and current density applications
- Superior mechanical performance (flex and crease)
- High resolution printing
- Higher speed curing than nanoinks
- Cures/sinters at low temperature

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

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

Typical Properties as Supplied

Physical State	Viscous silver paste
Viscosity ²	8 Pa·s
Density	3.38 g/cm ³
Percent Solids ³	79%
Shelf Life at 20°C	12 Months

Processing

Deposition methods	Screen printing; micro dispense		
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 Mesh Mesh counts are in threads per inch (TPI)	380/34µm, 460/27µm high TPI PET meshes for silver cost reduction 420/20µm V-Screen Next for better resolution		
Emulsion Over Mesh (EOM) Thickness	6µm or minimum recommended for mesh		
Recommended Squeegee	RKS Carbon BW or S HQ		
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 kg/m ²	~49 kg/m ²
	460/27 µm PET	~23 kg/m ²	~42 kg/m ²
	420/20 µm VSN	~16 kg/m ²	~24 kg/m ²
Mixing	Slow thorough mix, avoid inducing bubbles, fixed spatula in rotating jar ideal ⁵		
Recommended Thinner/Diluent	DBE-5		
Clean Up Solvents	Acetone/MEK/Similar Solvents		

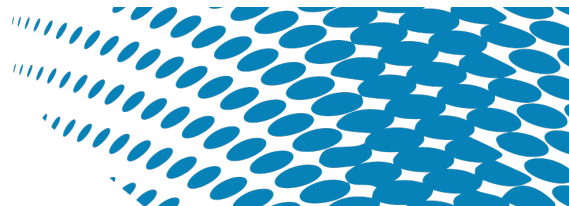
² Measured on Anton Paar MCR302 Rheometer at 10⁻¹ sec shear rate at 25°C after preshearing at 100⁻¹ for 5 min

³ 150°C for 120 min in box oven

⁴ Estimates relevant for finer and coarser feature printing respectively

⁵ AT-LM4 Stirring Type Mixer (E211) recommended





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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 SDS information.

Disclaimer

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