842ER Liquid

SUPER SHIELD™ Silver Epoxy Conductive Paint

842ER is a 2-part silver epoxy conductive paint. It is a smooth, flexible coating that provides excellent electrical conductivity at a low film thickness. It maintains flexibility at low temperatures, provides exceptional adhesion to a wide variety of substrates, and provides excellent environmental stability.

842ER is designed for large volume board-level or package-level EMI shielding applications. It can replace traditional metal lid, which reduces cost, board thickness, and mass.



Features & Benefits

Superior EMI shielding

Ambient and elevated temperature cure

Excellent chemical and corrosion resistance

Stable under extreme environmental conditions (100 hours at 150 ˚C, 100 hours at 85 ˚C/85% R.H.)

Withstands wave soldering

MEK and HAPS Free

Cure Instructions

Allow to sit at room temperature for 30 minutes and then cure the paint in an oven using one of these options:

Temperature	22 °C	65 °C	80 °C	100 °C	120 °C
Time	24 h	3 h	2 h	1 h	45 min

Available Packaging

Part #	Packaging	Net Vol.	Net Wt.
842ER-60ML	2 Bottle Kit	60 mL	91.7 g
842ER-900ML	2 Can Kit	900 mL	1.37 kg

Storage and Handling

Store between 16 and 27 ˚C in a dry area, away from sunlight (see SDS).

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Liquid Properties

Chemistry	Epoxy	—
Density	1.4 g/mL (Mixed) 1.7 g/mL (A) 0.9 g/mL (B)	ASTM D1475
Viscosity @ 25 ˚C	60 cP (A) 22 cP (B)	Brookfield Engineering labs Inc. IPCTM-65- Method 2.4.24.4
Mix Ratio	5:1 (Volume) 10:1 (Weight)	—
Recoat Time	5 min	—
Film Thickness	50 µm (Recommended) 20 µm (Minumum)	—
Percent Solids	54 %	—
Calculated VOC	1 181 g/L	—
Theoretical Coverage @ Recommended Thickness [a]	15 700 cm^2/L	Calculated
Shelf Life	2 y	—

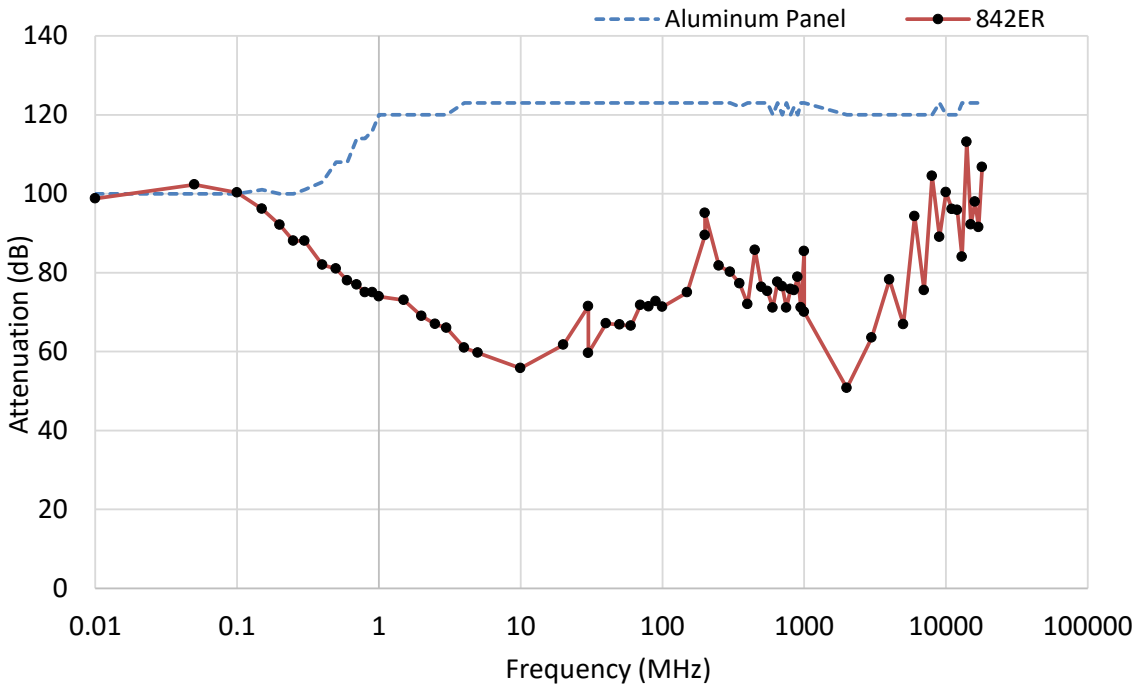
[a] Based on 99% transfer efficiency

Cured Properties

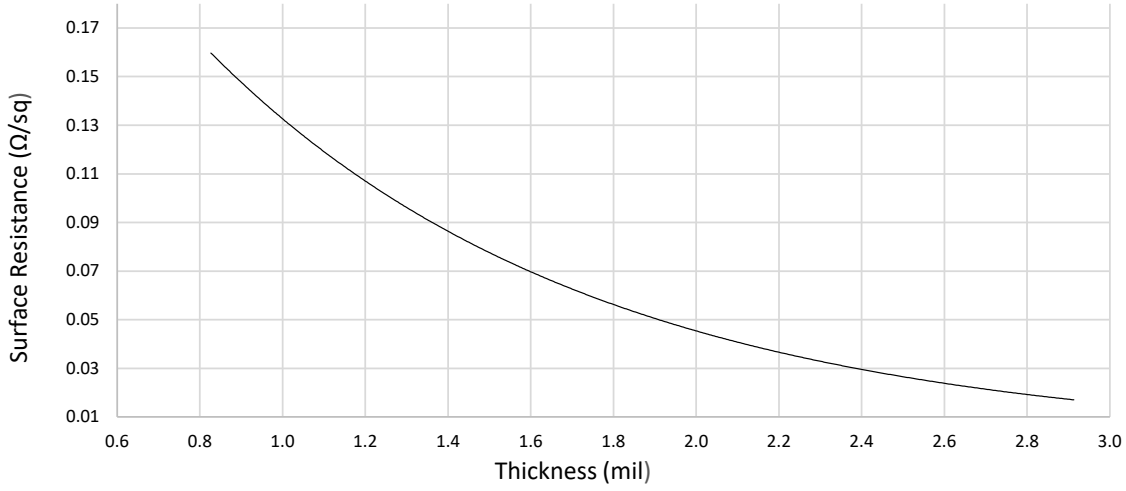
Color	Metallic silver	—
Magentic Class	Diamagnetic (non-magnetic)	—
Service Temperature Range	-40–150 °C	—
Resistivity	2.0 x 10^{-4} Ω·cm	MIL-STD-883J
Surface Resistance @ 50 µm	0.13 Ω/sq	Calculated
Salt Fog @ 35 °C, 96 h	Excellent	ASTM B117
Adhesion	4B (ABS) 5B (Aluminum) 5B (Copper) 5B (Polycarbonate) 5B (Polyamide) 5B (Glass) 0B (PVC) 5B (FR4) 5B (Stainless steel)	ASTM D3359
Pencil Hardness	4H, hard	ISO 15184

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Shielding Attenuation



Surface Resistance by Paint Thickness



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Application Instructions

Read the product SDS and Application Guide for more detailed instructions before using this product.

Recommended Preparation

Clean the substrate with Isopropyl Alcohol, MG #824, so the surface is free of oils, dust, and other residues.

Mixing

Ensure each part is mixed individually before they are mixed together. Scrape settled material from the bottom and sides of each container and stir contents until homogenous. Next, thoroughly mix parts A and B together, in a 10:1 ratio by weight.

Paint Roller and Brush

Thinning is not required. Use a standard paint roller, foam brush or MG #855 horse hair brush.

Manual Spray Guns

Use a standard fluid nozzle gun to spray the paint. The settings listed below are recommendations; however, performance will vary with different brands:

	LVMP	HVLP
Nozzle tip diamter	1.2–1.4 mm	1.2–1.4 mm
Inlet pressure	5–15 psi	5–15 psi
Air flow	10–15 SCFM	8.3 SCFM
Air cap	5–10 psi	5–10 psi

When using a pressure pot and agitator, keep the agitator at low mixing speed with air pressure of 20–50 psi. Use the lowest pressure necessary to keep the particles suspended.

Selective Coating

For higher volume applications, paint can be applied via selective coating equipment. Use a system with constant fluid recirculation to keep the particles from settling in the lines. A fluid nozzle ranging from 1.2 mm to 1.4 mm diameter and 5–10 psi fluid pressure is recommended depending on nozzle size.

Clean-up

Clean spray system and equipment with MEK or acetone, MG # 434.

Disclaimer: This information is believed to be accurate. It is intended for professional end-users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.