842ER | Super Shield Silver Conductive Coating

Superior EMI shielding for plastic enclosures

Description

842ER is a silver-filled conductive epoxy coating for high-performance EMI/RFI shielding of plastic electronic enclosures and assemblies.

It forms a permanent highly conductive surface that provides effective attenuation of electromagnetic interference while maintaining excellent electrical continuity in critical electronic and composite structures. The two-part epoxy system adheres well to most engineering plastics and cured coatings exhibit exceptional mechanical durability for long-term shielding performance in prototype through production-scale applications.

Key Characteristics

Shielding Effectiveness

10 MHz to 100 MHz:	56–73 dB
100 MHz to 10 GHz:	51–104 dB
10 GHz to 18 GHz:	84–107 dB

Electrical Properties

Resistivity:	2.0 × 10^{-4} Ω·cm
Surface Resistance @ 25 µm:	0.08 Ω/sq

Coating Thickness & Particle Size

Recommended:	25 µm
Minimum achievable:	25 µm
Particle Size Distribution:	D10 5µm, D50 13.4 µm, D90 28.5 µm



Features & Benefits

- Highly conductive silver epoxy coating for high-performance EMI/RFI shielding
- Permanent conductive coating for critical electrical-performance applications
- Exceptional mechanical durability and abrasion resistance after cure
- Excellent electrical continuity across complex geometries and engineered structures
- Excellent adhesion to common engineering plastics, composites, and prepared metal surfaces
- Two-part epoxy system for demanding aerospace, defense, and industrial applications
- Premium silver epoxy system for critical shielding and electrical-performance applications

Applications

- EMI/RFI shielding for electronic enclosures and assemblies
- RF and wireless communication systems
- Aerospace and defense electronics
- Composite structures requiring conductive shielding surfaces
- Sensors and precision instrumentation systems
- Telecommunications and networking equipment
- Automotive electronics and EV systems
- Permanent conductive coating applications requiring maximum electrical performance

Ordering Information

Part #	Pkg.	Net Vol.	Net Wt.
842ER-60ML	2 Bottle Kit	60 mL	91.7 g
842ER-900ML	2 Can Kit	900 mL	1.37 kg
842ER-4.25L	2 Can Kit	4.25 L	6.48 kg

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Physical Properties

Colour	Metallic Silver
Pencil Hardness	4H, Hard
Salt Fog Resistance	Excellent
Service Temperature Range	-40—150 °C

Electrical Properties

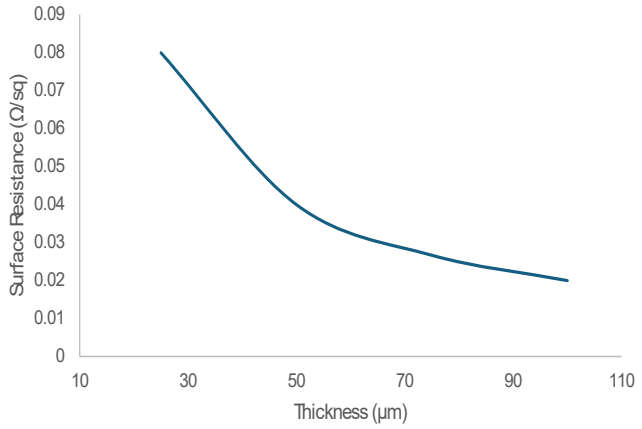
Surface Resistance @ 50 µm	0.04 Ω/sq
Surface Resistance @ 25 µm	0.08 Ω/sq
Resistivity	2.0 x 10^{-4} Ω·cm
Magnetic Class	Diamagnetic

Cured properties unless otherwise stated.

Cure Schedule

25°C	24 hours
65°C	3 hours
80°C	2 hours
100°C	1 hour
120°C	45 minutes

Surface Resistance by Paint Thickness



Uncured Properties

Film Thickness - Recommended	25 µm
Film Thickness - Minimum	25 µm
Coverage @ 25µm	88,810 cm2 /L
Density	1.7 g/mL (A)
	0.9 g/mL (B)
	1.5 g/mL (Mixed)
Viscosity @ 23°C	60 cP (A)
	22 cP (B)
Mix Ratio	5:1 (Volume)
	10:1 (Weight)
Recoat Time	5 min.
Percent Solids	54%
Dilution Ratio	None
Shelf Life	2 y
VOC Content	1181 g/L
Storage Temperature	16 to 27°C

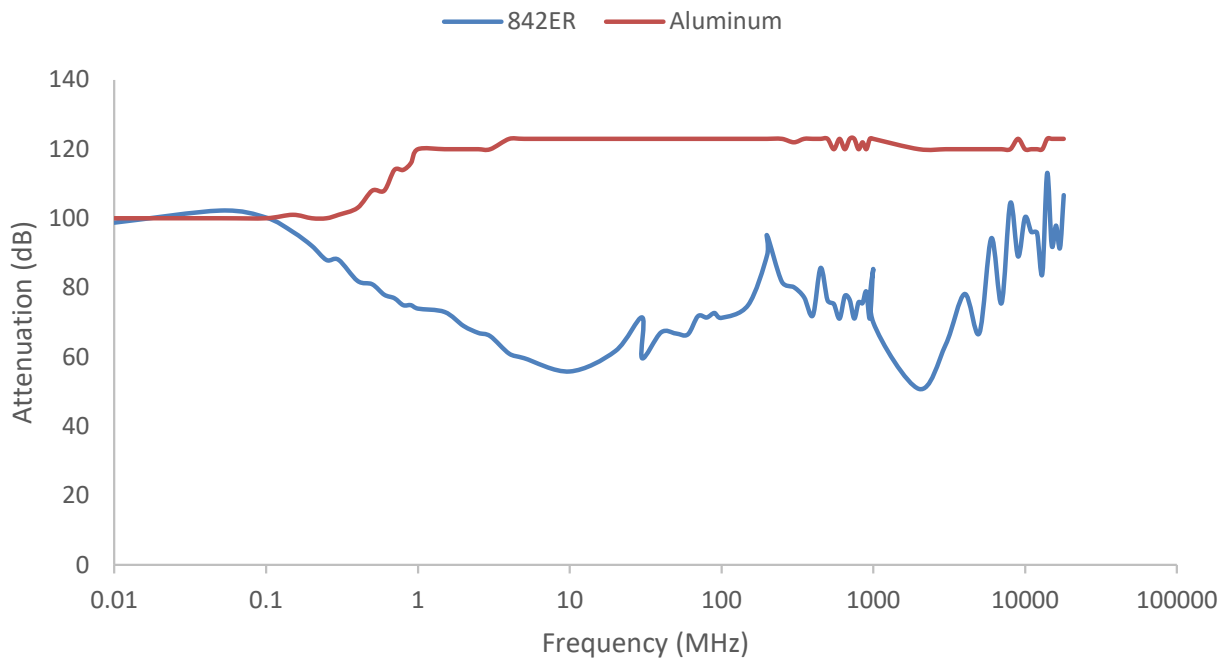
Adhesion Performance

ABS	4B
Aluminum	5B
Copper	5B
Polycarbonate	5B
Polyamide	5B
Glass	5B
PVC	0B
FR4	5B
Stainless Steel	5B

Shielding Effectiveness At Selected Frequencies

Frequency	Attenuation	Note
1 MHz	74	Lower limit of most EMC standards
100 MHz	71	Core commercial EMC band
1 GHz	85	Boundary between RF and Microwave
3 GHz	64	Upper limit of most broadband shielding specs
10 GHz	100	X-band radar, critical for aerospace and defense applications

Shielding Attenuation Graph



Standards Used

Adhesion	ASTM D3359	Viscosity	ASTM E3116
Pencil Test	ISO 15184	Shielding Effectiveness	MIL-STD-285
Salt Fog	ASTM B117	Resistivity	MIL-STD-883J Method 5011.6
Density	ASTM D1475		

Additional Resources

Scan a QR Code or click a link to access supporting documentation and product resources.

Product Webpage

Full product information, downloads, videos and more

SDS

Safety Data Sheet

Application Guide for ER Conductive Coatings

Application instructions and best practices

QC Guide for Conductive Coatings

Testing methods and quality control procedures

Category Data Sheet for ER Conductive Coatings

Technical overview and performance summary

EMI Shielding Coatings Catalogue

Complete solutions for EMI shielding

Ready to Solve Your EMI Shielding Challenge?

Our application engineers are here to help you select the right materials and achieve optimal shielding performance.

- Material Selection
- EMI Troubleshooting
- Process Optimization
- Custom Solutions

Talk to an Application Engineer

Get expert recommendations tailored to your design, materials, and requirements

Contact Engineering

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