843ER | Super Shield Silver-Coated Copper Conductive Coating

High-performance EMI shielding for plastic enclosures

Description

843ER is a silver-coated copper conductive epoxy coating for high-performance EMI/RFI shielding of plastic electronic enclosures, composite structures, and assemblies.

It forms a permanent conductive surface that provides effective attenuation of electromagnetic interference while maintaining strong electrical continuity in demanding electronic environments. The coating adheres well to most engineering plastics and prepared composite surfaces, and cured coatings exhibit excellent mechanical durability for long-term shielding performance in prototype through production-scale applications.

Key Characteristics

Shielding Effectiveness

10 MHz to 100 MHz:	46–58 dB
100 MHz to 10 GHz:	56–76 dB
10 GHz to 18 GHz:	68–88 dB

Electrical Properties

Resistivity:	1.8×10^{-3} Ω·cm
Surface Resistance @ 25 µm:	0.72 Ω/sq

Coating Thickness & Particle Size

Recommended:	25 µm
Minimum achievable:	25 µm
Particle Size Distribution:	D10 22 µm, D50 47 µm, D90 73 µm



Features & Benefits

- Silver-coated copper epoxy coating for high-performance EMI/RFI shielding
- Permanent conductive coating for long-term electrical performance
- Excellent mechanical durability and abrasion resistance after cure
- Effective shielding performance for complex geometries and engineered structures
- Excellent adhesion to common engineering plastics and prepared composite surfaces
- Two-part epoxy system for demanding aerospace, defense, and industrial applications
- Economical high-conductivity alternative to premium silver shielding systems

Applications

- EMI/RFI shielding for electronic enclosures and assemblies
- Composite structures requiring conductive shielding surfaces
- Aerospace and defense electronics
- Telecommunications and networking equipment
- Sensors and instrumentation systems
- Automotive electronics and EV systems
- Advanced research and development programs
- Permanent conductive coating applications requiring enhanced mechanical durability

Ordering Information

Part #	Pkg.	Net Vol.	Net Wt.
843ER-800ML	2 Bottle Kit	810 mL	895 g
843ER-3.25L	2 Can Kit	3.25 L	3.59 kg

Physical Properties

Colour	Metallic Brown
Pencil Hardness	> 6H, Hard
Salt Fog Resistance	Poor
Service Temperature Range	-40—120 °C

Electrical Properties

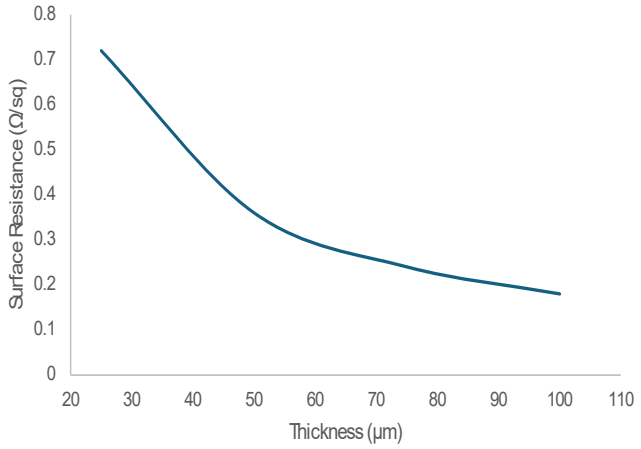
Surface Resistance @ 50 µm	0.36 Ω/sq
Surface Resistance @ 25 µm	0.72 Ω/sq
Resistivity	1.8 x 10^{-3} Ω·cm
Magnetic Class	Diamagnetic

Cured properties unless otherwise stated.

Cure Schedule

25°C	24 hours
65°C	4 hours
80°C	2 hours

Surface Resistance by Paint Thickness



Uncured Properties

Film Thickness - Recommended	25 µm
Film Thickness - Minimum	25 µm
Coverage @ 25µm	103,270 cm² /L
Density	1.2 g/mL (A)
	0.9 g/mL (B)
	1.1 g/mL (Mixed)
Viscosity @ 23°C	35 cP (A)
	9 cP (B)
Mix Ratio	100:36 (Volume)
	100:28 (Weight)
Recoat Time	3 min.
Percent Solids	30%
Dilution Ratio	None
Shelf Life	3 y
VOC Content	779 g/L
Storage Temperature	16 to 27°C

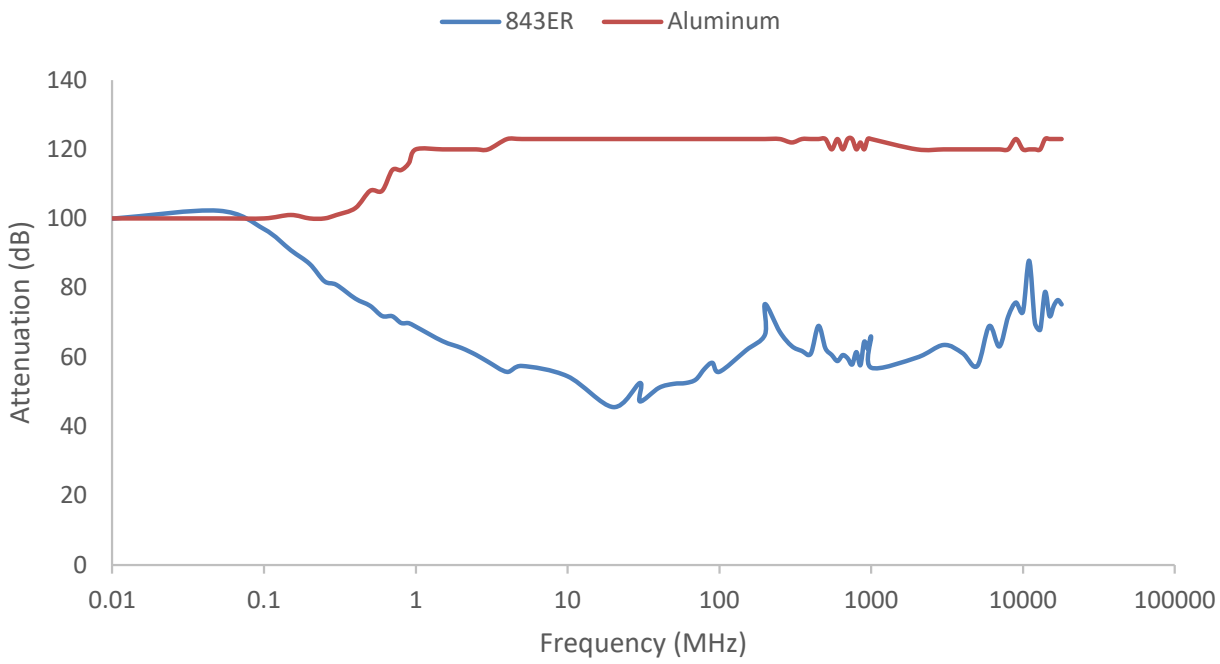
Adhesion Performance

ABS	5B
Aluminum	5B
Copper	5B
Polycarbonate	4B
Polyamide	5B
Glass	5B
PVC	3B
FR4	5B
Stainless Steel	5B

Shielding Effectiveness At Selected Frequencies

Frequency	Attenuation	Note
1 MHz	69	Lower limit of most EMC standards
100 MHz	56	Core commercial EMC band
1 GHz	66	Boundary between RF and Microwave
3 GHz	64	Upper limit of most broadband shielding specs
10 GHz	73	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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