841ER | Super Shield Nickel Conductive Coating

Broad Spectrum EMI shielding for plastic enclosures

Description

841ER is a nickel-filled conductive epoxy coating for grounding, low-frequency RFI shielding, and permanent conductive surfaces on plastic electronic enclosures, composite structures, and assemblies.

It forms a durable conductive surface that provides excellent attenuation of low-frequency electromagnetic interference while maintaining reliable electrical continuity in demanding industrial and electronic environments. The two-part epoxy system adheres well to most engineering plastics and prepared composite surfaces, and cured coatings exhibit excellent mechanical durability for long-term electrical performance in prototype through production-scale applications.

Key Characteristics

Shielding Effectiveness

10 MHz to 100 MHz:	10–33 dB
100 MHz to 10 GHz:	22–50 dB
10 GHz to 18 GHz:	15–35 dB

Electrical Properties

Resistivity:	3.0×10^{-2} Ω·cm
Surface Resistance @ 25 µm:	12 Ω/sq

Coating Thickness & Particle Size

Recommended:	25 µm
Minimum achievable:	25 µm
Particle Size Distribution:	D10 4 µm, D50 11.5 µm, D90 30.9 µm



Features & Benefits

- Durable nickel-filled epoxy coating for grounding and low-frequency RFI shielding
- Excellent attenuation of low-frequency electromagnetic interference
- Permanent conductive coating for long-term electrical performance
- Excellent mechanical durability and abrasion resistance after cure
- Reliable electrical continuity across large surfaces and engineered structures
- Excellent adhesion to common engineering plastics and prepared composite surfaces
- Two-part epoxy system for demanding industrial, aerospace, and infrastructure applications

Applications

- Grounding and conductive reference surfaces for electronic enclosures and assemblies
- Low-frequency EMI/RFI control for industrial and electronic systems
- Composite structures requiring permanent conductive surfaces
- Industrial automation and control electronics
- Aerospace and defense systems
- Power generation, transmission, and infrastructure equipment
- Sensors and instrumentation systems
- Permanent conductive coating applications requiring enhanced mechanical durability

Ordering Information

Part #	Pkg.	Net Vol.	Net Wt.
841ER-1.17L	2 Can Kit	1.17 L	1.92 kg
841ER-3.25L	2 Can Kit	3.25 L	5.34 kg

Physical Properties

Colour	Dark Gray
Pencil Hardness	4H, Hard
Salt Fog Resistance	Poor
Service Temperature Range	-40—150 °C

Cure Schedule

25°C	24 hours
65°C	4 hours
80°C	2 hours
100°C	1 hour

Uncured Properties

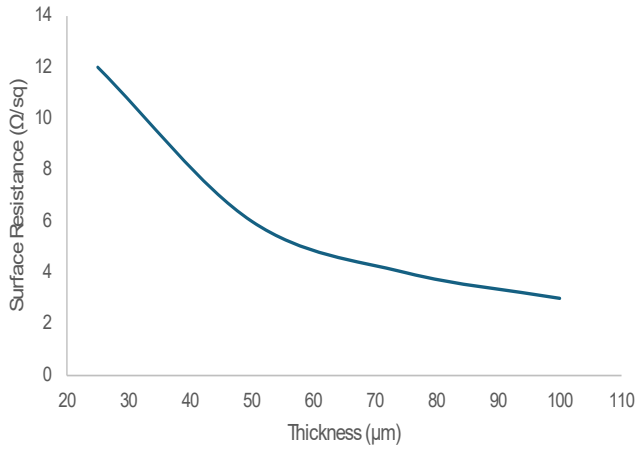
Film Thickness - Recommended	25 µm
Film Thickness - Minimum	25 µm
Coverage @ 25µm	123,600 cm^2 /L
Density	1.8 g/mL (A)
	1.2 g/mL (B)
	1.6 g/mL (Mixed)
Viscosity @ 23°C	200 cP (A)
	18 cP (B)
Mix Ratio	100:38 (Volume)
	4:1 (Weight)
Recoat Time	5 min.
Percent Solids	65%
Dilution Ratio	None
Shelf Life	3 y
VOC Content	703 g/L
Storage Temperature	16 to 27°C

Electrical Properties

Surface Resistance @ 50 µm	6 Ω/sq
Surface Resistance @ 25 µm	12 Ω/sq
Resistivity	3.0 x 10^{-2} Ω·cm
Magnetic Class	Ferromagnetic

Cured properties unless otherwise stated.

Surface Resistance by Paint Thickness



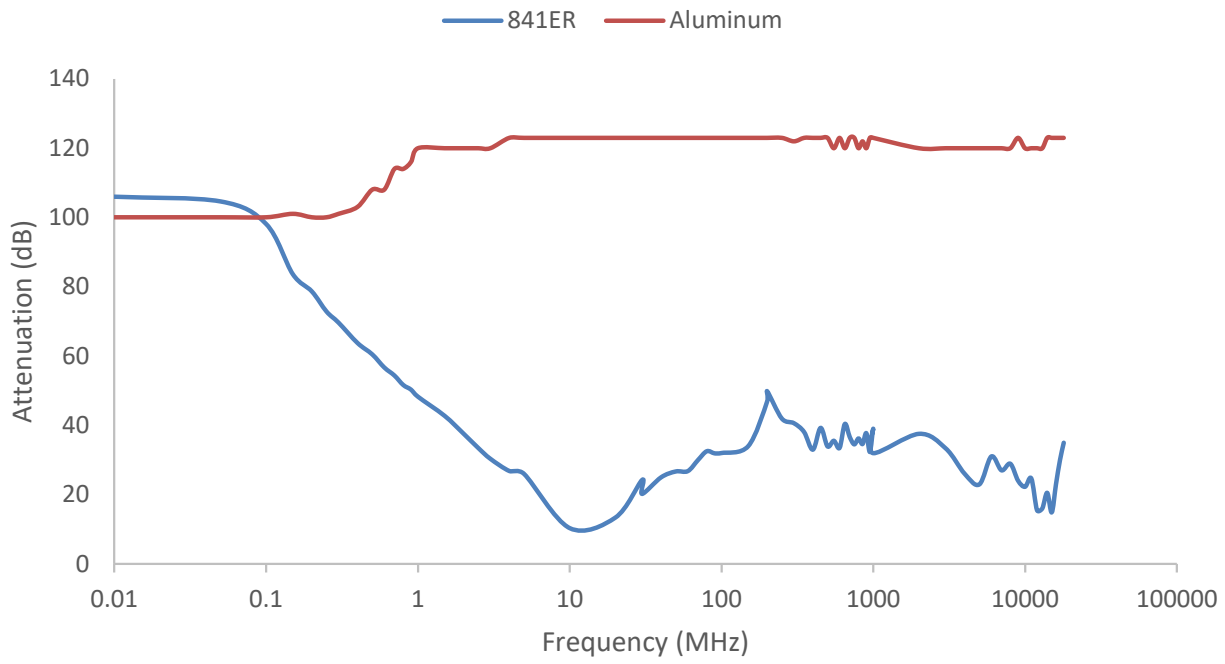
Adhesion Performance

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

Shielding Effectiveness At Selected Frequencies

Frequency	Attenuation	Note
1 MHz	48	Lower limit of most EMC standards
100 MHz	32	Core commercial EMC band
1 GHz	39	Boundary between RF and Microwave
3 GHz	33	Upper limit of most broadband shielding specs
10 GHz	22	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

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.