841WBU | Super Shield Nickel Conductive Coating

Broad-spectrum EMI shielding for plastic enclosures

Description

841WBU is a water-based conductive coating for EMI/RFI shielding of plastic electronic enclosures, composite structures, and other non-conductive surfaces.

It forms a conductive shielding layer that attenuates electromagnetic interference while providing reliable electrical continuity across a broad frequency range.

The low-VOC water-based formulation offers an alternative to solvent-based conductive coatings for applications requiring improved workplace safety, reduced solvent exposure, low odor handling, non-flammable processing, or environmental compliance, while remaining suitable for prototype through production-scale use.

Key Characteristics

Shielding Effectiveness

10 MHz to 100 MHz:	18–35 dB
100 MHz to 10 GHz:	33–63 dB
10 GHz to 18 GHz:	54–64 dB

Electrical Properties

Resistivity:	8.4×10^{-2} Ω·cm
Surface Resistance @ 25 µm:	33.6 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

- Water-based conductive coating for EMI/RFI shielding applications
- Low-VOC formulation for improved workplace safety and reduced solvent exposure
- Low odor and non-flammable formulation that simplifies handling in laboratory, development, and production environments
- Provides conductive shielding performance across a broad frequency range
- Excellent adhesion to plastics, composites, wood, and other non-conductive substrates
- Suitable for environmentally conscious and regulatory-sensitive manufacturing environments
- Compatible with brush, spray, and selective coating application methods
- Easy cleanup and handling compared to solvent-based conductive coatings

Applications

- EMI/RFI shielding for plastic electronic enclosures and assemblies
- Composite structures requiring conductive shielding surfaces
- Communications equipment and network infrastructure
- Sensors and instrumentation systems
- Musical instrument cavity shielding and conductive surface treatments
- Defense, research, and electronic infrastructure applications
- Prototype and low-VOC manufacturing environments

Ordering Information

Part #	Pkg.	Net Vol.	Net Wt.
841WBU-55ML	Bottle	55 mL	99.4 g
841WBU-850ML	Can	850 mL	1.53 kg
841WBU-3.78L	Can	3.60 L	6.50 kg

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Physical Properties

Colour	Dark Gray
Pencil Hardness	2B, Soft
Salt Fog Resistance	Poor
Service Temperature Range	-40—120 °C

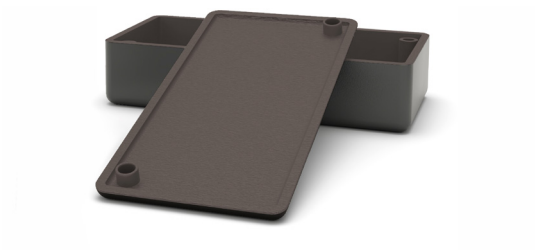
Electrical Properties

Surface Resistance @ 50 µm	16.8 Ω/sq
Surface Resistance @ 25 µm	33.6 Ω/sq
Resistivity	8.4 x 10^{-2} Ω·cm
Magnetic Class	Ferromagnetic

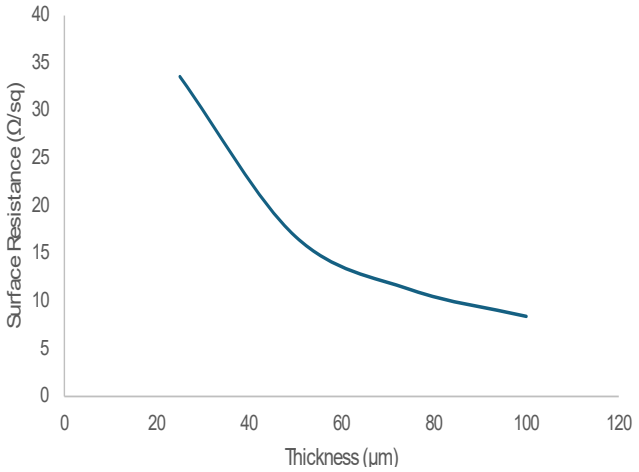
Cured properties unless otherwise stated.

Cure Schedule

25°C	24 hours
65°C	3 hours
80°C	1 hour



Surface Resistance by Paint Thickness



Adhesion Performance

ABS	5B
Aluminum	2B
Copper	5B
Polycarbonate	5B
Polyamide	5B
Glass	5B
PVC	5B
FR4	5B
Stainless Steel	5B

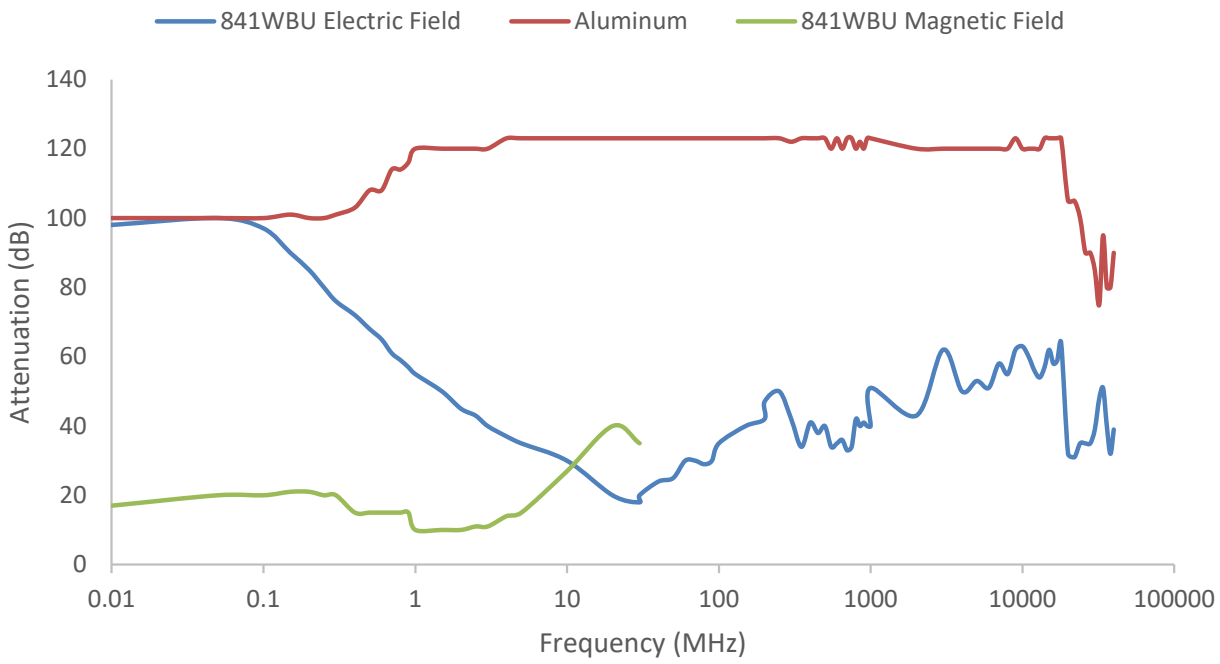
Uncured Properties

Film Thickness - Recommended	25 µm
Film Thickness - Minimum	25 µm
Coverage @ 25 µm	102,240 cm^2/L
Density	1.8 g/mL
Viscosity @ 23 °C	123 cP
Recoat Time	6 min.
Percent Solids	58%
Dilution Ratio	None
Shelf Life	2 y
VOC Content	316 g/L
Storage Temperature	-10 to 27°C

Shielding Effectiveness At Selected Frequencies

Frequency	Attenuation	Note
1 MHz	55	Lower limit of most EMC standards
100 MHz	35	Core commercial EMC band
1 GHz	51	Boundary between RF and Microwave
3 GHz	62	Upper limit of most broadband shielding specs
10 GHz	63	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	IEEE-299.1:2013
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 WB Conductive Coatings

Application instructions and best practices

QC Guide for Conductive Coatings

Testing methods and quality control procedures

Category Data Sheet for WB 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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