841AR | Super Shield Nickel Conductive Coating

Broad-spectrum EMI shielding for plastic enclosures

Description

841AR is a nickel-filled conductive acrylic coating for broad-spectrum EMI/RFI shielding of plastic electronic enclosures and assemblies.

It forms a durable conductive network that effectively attenuates both electric and magnetic field interference across a wide frequency range. The coating adheres well to most engineering plastics, including ABS, PVC, nylon, and polycarbonate. 841AR dries quickly at room temperature and can be applied by brush, spray gun, or selective coating equipment for prototype through production-scale applications.

Key Characteristics

Shielding Effectiveness

10 MHz to 100 MHz:	42–55 dB
100 MHz to 10 GHz:	55–89 dB
10 GHz to 18 GHz:	68–93 dB

Electrical Properties

Resistivity:	4.0 × 10^{-3} Ω·cm
Surface Resistance @ 25 µm:	1.60 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 coating with good flexibility and abrasion resistance
- Strong environmental and corrosion resistance for humid and marine environments
- Conforms easily to complex geometries and molded structures
- Safe for use on polystyrene and other delicate plastics
- Fast-drying coating suitable for brush, spray, and selective coating processes
- Ambient-temperature cure with optional heat acceleration
- UL Recognized (File # E202609)

Applications

- Sensors and instrumentation systems
- Industrial automation and control electronics
- RF and telecommunications equipment
- Aerospace and defense electronics
- Lightweight electronic housings and subsystems
- Antenna and RF test enclosures
- Radar-absorbent surface treatment
- Automotive electronics and EV systems

Ordering Information

Part #	Pkg.	Net Vol.	Net Wt.
841AR-P*	Pen	5.0 mL	7.57 g
841AR-55ML	Bottle	55 mL	92.8 g
841AR-340G*	Aerosol	326 mL	340 g
841AR-900ML	Can	850 mL	1.43 kg
841AR-3.78L	Can	3.60 L	6.07 kg
841AR-18.9L	Pail	18.9 L	31.9 kg

*See separate TDS for aerosol and pen formats.

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Physical Properties

Colour	Dark Gray
Pencil Hardness	3H, Hard
Salt Fog Resistance	Excellent
Service Temperature Range	-40—120 °C

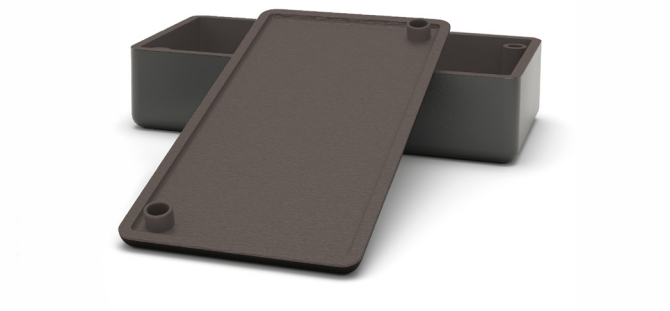
Electrical Properties

Surface Resistance @ 50 µm	0.80 Ω/sq
Surface Resistance @ 25 µm	1.60 Ω/sq
Resistivity	4 x 10^{-3} Ω·cm
Magnetic Class	Ferromagnetic

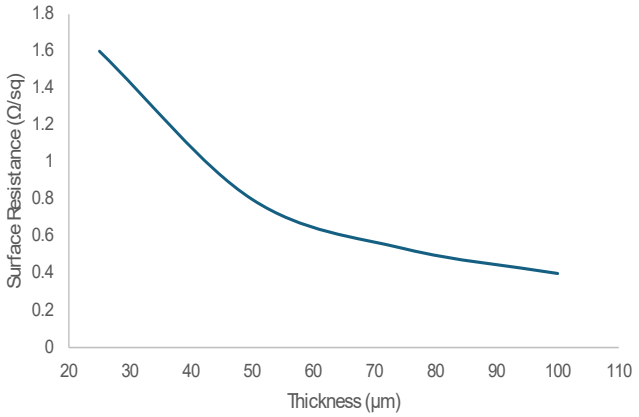
Cured properties unless otherwise stated.

Cure Schedule

25°C	24 hours
65°C	30 minutes



Surface Resistance by Paint Thickness



Adhesion Performance

ABS	5B
Aluminum	0B
Copper	0B
Polycarbonate	5B
Polyamide	5B
Glass	0B
PVC	5B
FR4	5B
Stainless Steel	2B

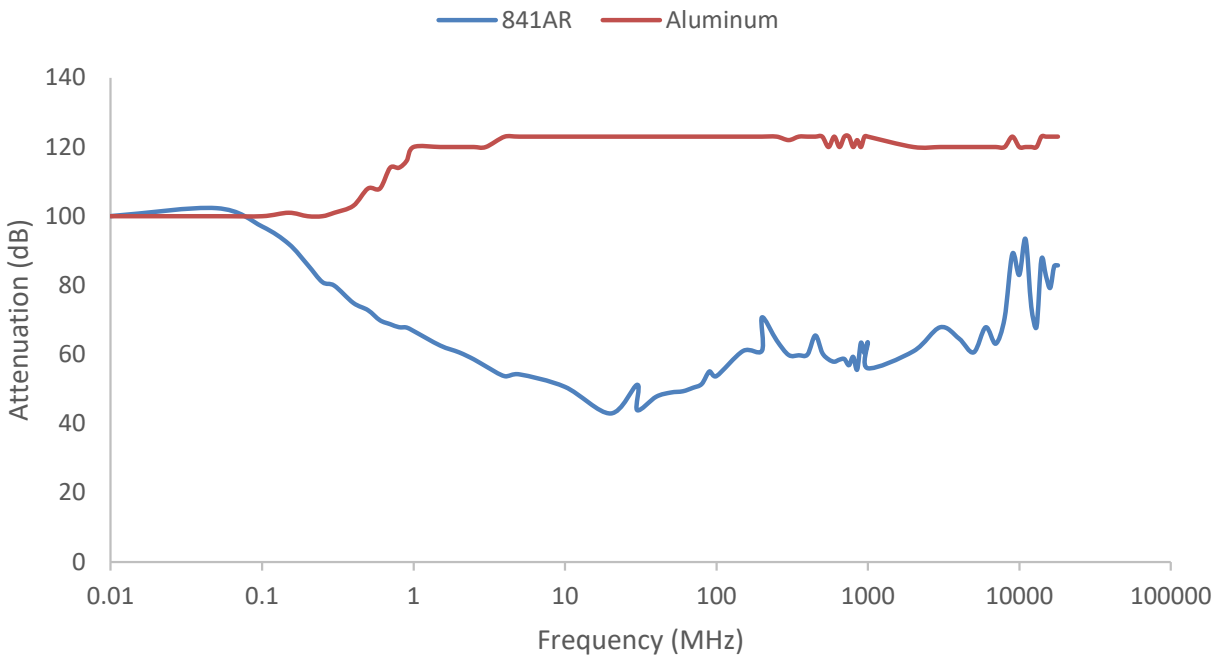
Uncured Properties

Film Thickness - Recommended	25 µm
Film Thickness - Minimum	25 µm
Coverage @ 25 µm	95,570 cm^2/L
Density	1.7 g/mL
Viscosity @ 23 °C	1460 cP
Recoat Time	3 min.
Percent Solids	57%
Dilution Ratio	1:1 with 4351
Shelf Life	5 y
VOC Content	483 g/L
Storage Temperature	16 to 27°C

Shielding Effectiveness At Selected Frequencies

Frequency	Attenuation	Note
1 MHz	67	Lower limit of most EMC standards
100 MHz	54	Core commercial EMC band
1 GHz	63	Boundary between RF and Microwave
3 GHz	68	Upper limit of most broadband shielding specs
10 GHz	83	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 AR Conductive Coatings

Application instructions and best practices

QC Guide for Conductive Coatings

Testing methods and quality control procedures

Category Data Sheet for AR 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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