838AR Liquid

Total Ground™
Carbon Conductive Paint

838AR is an economical conductive paint that consists of a 1-part, solvent-based acrylic lacquer, pigmented with highly conductive carbon powder. It is smooth, durable, and abrasion resistant. It can be easily applied by brush or spray. It has a quick dry time, with no heat cure necessary. It adheres strongly to most injection-molded plastics, such as ABS, PBT and PVA. It provides strong corrosion resistance and is suitable for use in marine environments.

838AR is excellent for creating grounded surfaces and in low frequency RFI shielding applications, such as pickup cavities on electric guitars. It is also perfect for shielding metal detectors and other devices where a metal-filled conductive paint would cause malfunction.



Features & Benefits

- Provides >52 dB of RFI shielding at frequencies <1 MHz
- Quick dry time, no heat cure required, and easy to apply
- Strong corrosion resistance
- Mild solvent system, safe on polystyrenes
- Does not contain toluene, xylene, or MEK
- Also available in aerosol (838AR-340G) and pen (838AR-P) formats, see separate TDSs

Available Packaging

Cat. No.	Packaging	Net Vol.	Net Wt.
838AR-15ML	Jar	12 mL	10.6 g
838AR-900ML	Can	850 mL	755 g
838AR-3.78L	Can	3.60 L	3.20 kg

Contact Information

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Cured Properties

Resistivity	6.3 x 10^{-1}	Ω·cm
Surface Resistance @ 50 µm	100	Ω/sq
Salt fog @ 35 °C [95 °F], 96 h	Excellent	
Service Temperature Range	-40–120	˚C

Usage Parameters

Recoat Time	3	min
Cure Times	24 h @ 22	˚C
	30 min @ 65	˚C
Recommended Film Thickness	50	µm
Minimum Film Thickness	25	µm
Theoretical Coverage @ 2 mil (based on 100% transfer efficiency)	20 016	cm^2/L

Uncured Properties

Viscosity @ 25 ˚C	114	cP
Density	0.89	g/mL
Percent Solids	15	%
Calculated VOC	519	g/L

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Application Instructions

Read the product SDS and Application Guide for more detailed instructions before using this product (downloadable at www.mgchemicals.com).

Recommended Preparation

Clean the substrate with Isopropyl Alcohol, MG #824, so the surface is free of oils, dust, and other residues.

Recommended Thinner

When applying to polycarbonate or ABS, thin with MG #4351 Thinner 1. For other substrates, use MG #435 Thinner.

Brush

Thinning is not required for most brush applications. Use a foam brush or MG #855 horse hair brush.

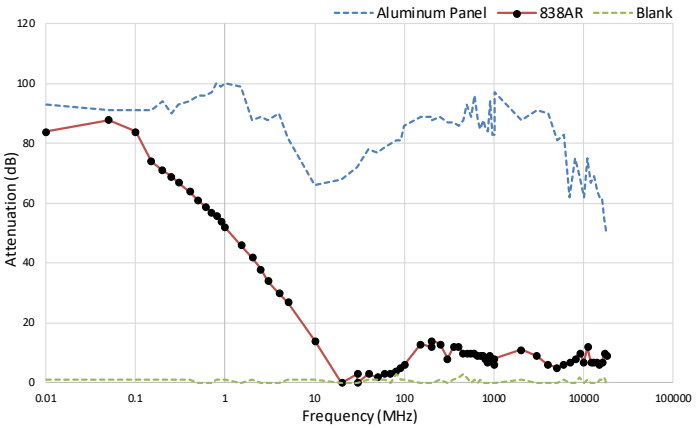
Manual Spray Guns

Dilute 2-parts paint with 1-part thinner. Use a standard fluid nozzle gun to spray the diluted paint. The settings listed below are recommendations; however, performance will vary with different brands:

	LVMP	HVLP
Nozzle tip diameter	1.2–1.4 mm	1.2–1.4 mm
Inlet pressure	5–15 psi	5–15 psi
Air flow	10–15 SCFM	8.3 SCFM
Air cap	5–10 psi	5–10 psi

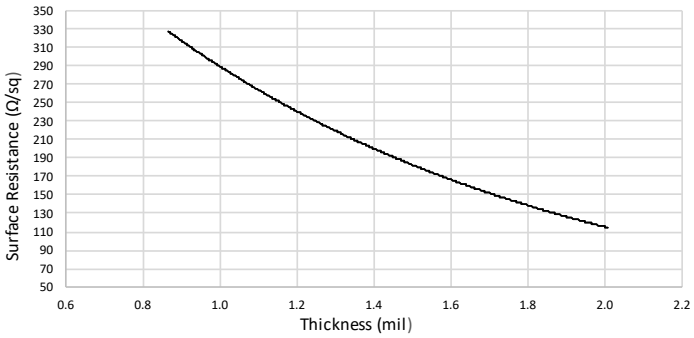
When using a pressure pot and agitator, keep the agitator at low mixing speed with air pressure of 20–50 psi. Use the lowest pressure necessary to keep the particles suspended.

Shielding Attenuation



Test performed with a two-coat thickness.

Surface Resistance by Paint Thickness



Selective Coating

For higher volume applications, paint can be applied via selective coating equipment. Use a system with constant fluid recirculation to keep the particles from settling in the lines. A fluid nozzle ranging from 1.2 mm–1.4 mm diameter and 5–10 psi fluid pressure is recommended depending on nozzle size. Thin the paint to adjust the viscosity to the level appropriate for the valve being used.

Cure Instructions

Allow to dry at room temperature for 24 hours, or after letting sit for 3 minutes, cure the paint in an oven for 30 minutes @ 65 ˚C.

Clean-up

Clean spray system and equipment with MEK or acetone, MG # 434.

Storage and Handling

Store between -5 and 40 ˚C in a dry area, away from sunlight (see SDS).

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.