

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 and 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
- HAP free—does not contain toluene or xylene
- Available in aerosol format (see separate TDS)

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 | $6.3 \times 10^{-1} \Omega \cdot \text{cm}$ |
| Surface Resistance @ 50 μm | 100 Ω/sq |
| Service Temperature Range | -40–120 °C |

Usage Parameters

| | |
|---|--------------------------------------|
| Dry To Touch | 3 min |
| Cure Times | 24 h @ 22 °C 30 min @ 65 °C |
| Recommended Film Thickness | 50 μm |
| Theoretical Coverage @ 50 μm | $\leq 13\,000 \text{ cm}^2/\text{L}$ |

Uncured Properties

| | |
|-------------------|-----------|
| Viscosity @ 25 °C | 114 cP |
| Density | 0.89 g/mL |
| Percent Solids | 15 % |
| Shelf Life | 3 y |
| Calculated VOC | 519 g/L |

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Application Instructions

Read the product SDS 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.

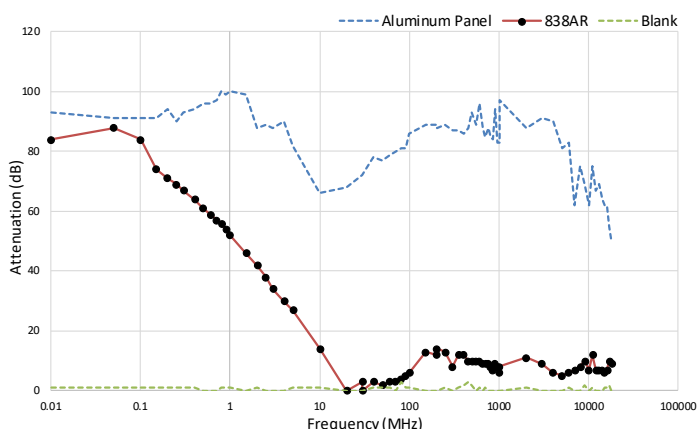
HLVP Spray

Dilute 2-parts paint to 1-part thinner. Use a standard HLVP (High Volume Low Pressure) fluid nozzle gun with a minimum tip diameter of 0.8–1.0 mm. The settings listed below are recommendations; however, performance will vary with different brands:

- Inlet: 20–40 psi
- Air flow: 10–15 SCFM
- Air cap: 8–10 psi

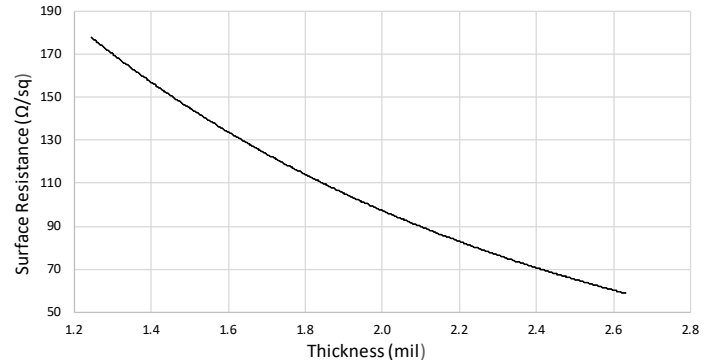
When using a pressure pot and agitator, keep the agitator at low mixing speed with air pressure of 20–50 psi. Use the lowest pressure necessary to keep the particles suspended.

Shielding Attenuation



Test performed with a two-coat thickness.

Surface Resistance by Paint Thickness



Robotic Spray

For higher volume applications, paint can be applied via robotic spray equipment. Use a system with constant fluid recirculation to keep the particles from settling in the lines. A fluid nozzle ranging from 0.5 mm to 1.0 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.