

## Acrylic ESD Coating—Aerosol

### Description

844AR is a one-part, solvent-based, permanent electrostatic dissipative (ESD) coating. It adheres strongly to plastics, paints, metals, and many other surfaces. The cured coating is flexible, durable, and will not crack, chip or peel. The coating can be cured at room temperature or higher.

844AR is commonly used in electronic assembly lines to protect against electrostatic charge build-up on tools, production conveyor and bumpers, assembly trays, workstation surfaces, and enclosures.

### Features and Benefits

- *Permanent static dissipative coating*
- *Quick-dry*
- *Strong adhesion with excellent flexibility*
- *Low VOC and HAP free*
- *Does not contain toluene, xylene or MEK*

### Usage Parameters

Properties	Value
Dry/recoat time	5 min
Full cure @22 °C [72 °F]	24 h
Full cure @65 °C [149 °F]	30 min
Shelf life	2 y
Theoretical 340G spray can coverage <sup>a)</sup>	≤1 000 cm <sup>2</sup> [≤150 in <sup>2</sup> ]

**a)** Estimate based on a coat thickness of 25 µm [1.0 mil] and 65% transfer efficiency.

## Temperature Ranges

Properties	Value
Constant service temperature	-40–120 °C [-40–248 °F]
Intermittent temperature limit	-50–125 °C [-58–257 °F]
Storage temperature limit	-5–40 °C [23–104 °F]

## Cured Properties

Electrical & Magnetic Properties	Method	Value
Surface resistance <sup>b)</sup> 1 coat @0.3 mil 2 coats @0.7 mil 3 coats @0.9 mil	square probe square probe square probe	1.5 x 10 <sup>9</sup> Ω/sq 5.5 x 10 <sup>8</sup> Ω/sq 2.2 x 10 <sup>9</sup> Ω/sq
Magnetic class	—	Diamagnetic (non-magnetic)
Relative permeability	—	<1.0

**b)** Surface resistance is given in Ω/sq and the corresponding conductance in Siemens (S or Ω).

## Cured Properties

Physical Properties	Method	Value
Paint type	—	Lacquer (thermoplastic)
Color	Visual	Off-white
Abrasion resistant	—	Yes
Blister resistant	—	Yes
Peeling resistant	—	Yes
Water resistant	—	Yes
Mechanical Properties	Method	Value
Adhesion (ABS)	ASTM D 3359	5B
(PC)	ASTM D 3359	0B
(PVC)	ASTM D 3359	5B
(Polyamide)	ASTM D 3359	5B
(Aluminum)	ASTM D 3359	5B
(Copper)	ASTM D 3359	5B
(Brass)	ASTM D 3359	5B
(Stainless Steel)	ASTM D 3359	0B
(Glass)	ASTM D 3359	0B
Pencil hardness (ABS)	ASTM D 3363	H, hard

## Uncured Properties

Physical Properties	Mixture
Color	Off-white
Density @25 °C [77 °F]	1.06 g/mL
Viscosity @25 °C [77 °F]	TBD
Flash Point	-17 °C [1.4 °F]
Odor	Sweet

## Compatibility

**Chemical resistance**—The thermoplastic resin is dissolved by common paint solvents like toluene, xylene, acetone and MEK. This allows for easy repair and rework of the coating, but makes it unsuitable for use in solvent-rich environments.

**Adhesion**—The coating adheres to most plastics and metals used to house printed circuit assemblies; however, it is not compatible with contaminants like water, oil, or greasy flux residues that may affect adhesion. If contamination is present, first clean the surface to be coated with MG Chemicals 824 Isopropyl alcohol.

## Substrate Adhesion

Substrate	Note
Acrylonitrile Butadiene Styrene (ABS)	Chemically etches <sup>a)</sup> and adheres well.
Polyvinyl Acetate (PVA)	Chemically etches <sup>a)</sup> and adheres well.
Polyvinyl Chloride (PVC)	Chemically etches <sup>a)</sup> and adheres well.
Polyamide (Nylon 66)	Chemically etches <sup>a)</sup> and adheres well.
Acrylics or Acrylic Paints	Adheres well to clean surfaces.
Epoxy, FR4 substrate	Adheres well to clean surfaces.
Polyurethane	Adheres well to clean surfaces for most urethane types.
Wood	Adheres well with surface preparation.
Brass	Adheres well with surface preparation.
Copper	Adheres well with surface preparation.
Aluminum	Adheres well with surface preparation.

**a)** Etching is similar to sanding, except that it softens the surface helping the paint adhere to the plastic.

## Storage

Store between -5 and 40 °C [23 and 104 °F] in a dry area, away from sunlight. Temperatures below or above these outer limits will result in the container being crushed and/or ruptured.

## Health and Safety

Please see the 844AR-Aerosol Safety Data Sheet (SDS) for further details on transportation, storage, handling, safety guidelines, and regulatory compliance.

## Application Instructions

### Spraying:

1. Shake the can vigorously.
2. Spray a test pattern to ensure good flow quality.
3. At an approximate distance of 20–25 cm (8–10 in), tilt the board 45° from a vertical position and spray a thin and even coat. Use spray-and-release strokes with an even motion to avoid excess paint in one spot. Start and end each stroke off the surface.
4. Wait 5 min before applying another coat to avoid trapping solvent.
5. Rotate the board 90° and spray again to ensure good coverage.
6. Apply other coats until desired thickness is achieved (go to step 3).
7. Let dry for 5 min at room temperature before heat cure.

### Clearing nozzle between use:

1. Invert the can upside down.
2. Use a foam or roller brush to coat the board. Use long, smooth strokes to create an even coat.

## Cure Instructions

### Room temperature cure:

- Let cure at room temperature for 24 h.

### Heat cure:

- Put in oven at 65 °C [149 °F] for 30 min.

## Packaging and Support Products

Cat. No.	Packaging	Net Volume	Net Weight	Packaged Weight
844AR-340G	Aerosol	373 mL [12.6 fl oz]	340 g [12.0 oz]	450 g [1.00 lb]

## Technical Support

Please contact us regarding any questions, suggestions for improvements, or problems with this product. Application notes, instructions and FAQs are located at [www.mgchemicals.com](http://www.mgchemicals.com).

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