# 842UR Liquid

## Highly Conductive Silver Coating for EMI Shielding Semiconductor Packages

842UR is a 1-part, heat-cured, silver polyurethane coating. It is a smooth, flexible coating that provides excellent electrical conductivity at a low film thickness. It maintains flexibility at low temperatures, provides exceptional adhesion to a wide variety of substrates, and provides excellent environmental stability.

842UR is designed for large volume board-level or package-level EMI shielding applications. It can replace traditional metal lid, which reduces cost, board thickness, and mass.




## Features & Benefits

- Provides superior EMI shielding
- Excellent flexibility, toughness and adhesion
- Stable under extreme environmental conditions (100 hours at 150 ˚C, 100 hours at 85 ˚C/85% R.H.)
- Withstands wave soldering
- Designed for selective spray applications

## Cured Properties

| | | |
|---|---|---|
| Resistivity | 1.5 x $10^{-4}$ | Ω·cm |
| Surface Resistance @ 25 µm | 0.0080 | Ω/sq |
| Salt Fog @ 35 °C [95 °F], 96 h | Excellent | |
| Service Temperature Range | -40–125 | ˚C |

## Available Packaging

| Cat. No. | Packaging | Net Vol. | Net Wt. |
|---|---|---|---|
| 842UR-55ML | Bottle | 55 mL | 73.3 g |
| 842UR-850ML | Can | 850 mL | 1.13 kg |
| 842UR-3.6L | Can | 3.60 L | 4.80 kg |

## Usage Parameters

| | | |
|---|---|---|
| Recoat Time | 20 | min |
| Cure Times | 15 min @ 140 | ˚C |
| | 30 min @ 125 | ˚C |
| Recommended Film Thickness | 25 | µm |
| Minimum Film Thickness | 7 | µm |
| Theoretical Coverage @ 2 mil (based on 100% transfer efficiency) | 26 570 | $cm^2$/L |

## Contact Information

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## Uncured Properties

| | | |
|---|---|---|
| Viscosity @ 25 ˚C | 4 | cP |
| Density | 1.33 | g/mL |
| Percent Solids | 30 | % |
| Shelf Life | 5 | y |
| Calculated VOC | 360 | 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.

## Brush

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

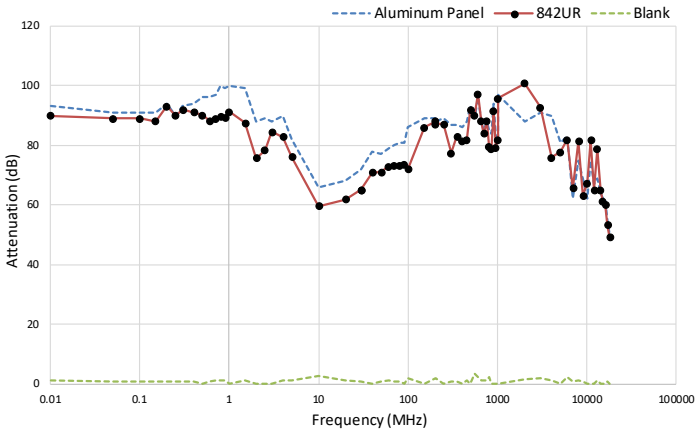
## Manual Spray Guns

Use a standard HVLP (High Volume Low Pressure) fluid nozzle gun with a minimum tip diameter of 1.2–1.4 mm. 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 |

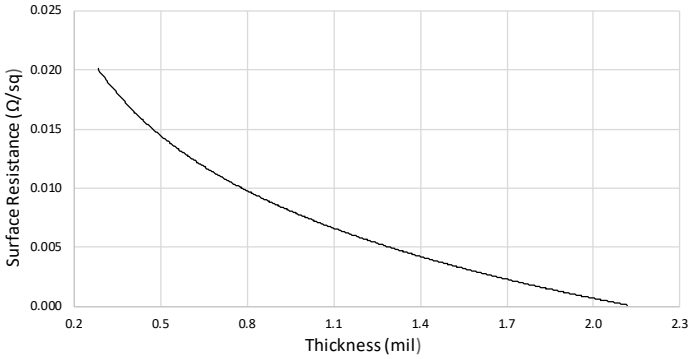
When using a pressure pot and agitator, keep the agitator at low mixing speed with air pressure of 20–50 psi. Use the lowest pressure necessary to keep the particles suspended.

## Shielding Attenuation




Test performed with a two-coat thickness.

## Surface Resistance by Coating 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

The product will not cure at room temperature. After letting sit for 3 minutes, cure the coating in an oven at one of these time/temperature options:

| | | |
|---|---|---|
| **Temperature** | 125 °C | 140 °C |
| **Time** | 30 min | 15 min |

## Clean-up

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

## Storage and Handling

Store between 10 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.