

# 1H2OAR1™ Aerosol Acrylic Conformal Coating Technical Data Sheet

HumiSeal 1H2OAR1™ Aerosol is a water-based acrylic conformal coating supplied in a “Bag on Valve” (BoV) aerosol can. It provides excellent moisture insulation resistance and can be chemically removed or soldered through for rework. The coating contains a UV tracer for ease of inspection. 1H2OAR1™ Aerosol is MIL-I-46058C qualified, IPC-CC-830 and RoHS Directive 2002/95/EC compliant, and UL746E recognized under File Number E105698.

## Properties of HumiSeal 1H2OAR1™ Aerosol

Can Contents	207 mL
Solids Content, %	37 ± 2
Approximate Coverage per Can	1.1 m <sup>2</sup> @ 50 µm
Drying Time to Handle	30-60 minutes
Recommended Coating Thickness, microns	27-75
Shelf Life, DOM	12 months
Recommended Curing	1 hr @ RT and then 6 hrs @ 80°C
Time to Optimum Properties	7 Days
Thermal Shock, 50 cycles per MIL-I-46058C	-65°C to 125°C
Flammability, per UL94	V-0
Temperature & Humidity Aging per MIL-I-46058C	Pass
Dielectric Withstand Voltage (DWV), volts per MIL-I-46058C	>1500
Dielectric Breakdown Voltage, volts per ASTM, Meth. D149	7925
Dielectric Constant, at 1MHz and 25°C per ASTM-D150-65T	2.5
Dissipation Factor, at 1MHz and 25°C per ASTM-D150-65T	0.01
Insulation Resistance, ohms per MIL-I-46058C	2.1 x 10 <sup>13</sup>
Moisture Insulation Resistance, ohms per MIL-I-46058C	3.2 x 10 <sup>10</sup>
Fungus Resistance, per ASTM-G21	Passes
Recommended Stripper	HumiSeal Stripper 1072

## Application of HumiSeal 1H2OAR1™ Aerosol

Cleanliness of the substrate is of extreme importance for the successful application of a conformal coating. Surfaces must be free of moisture, dirt, wax, grease, flux residues and all other contaminants. Contamination under the coating will cause problems that may lead to assembly failures.

Waterborne coatings should not be placed directly on bare/untreated steel. Applying waterborne coatings when the Relative Humidity is > 80% will adversely affect coating uniformity and can cause poor adhesion.

When HumiSeal 1H2OAR1™ Aerosol is first applied, it has a milky white appearance. As the film dries, the white colour fades until a clear, transparent film remains. The white colour aids the operator's coverage inspection and the colour change serves as an indicator that the coating is dry to the touch. It is recommended that the coating be allowed to reach a tack-free condition before using heat to accelerate the cure process.

### Before Use

- There is no need to shake the can prior to use.
- Cans should be stored at room temperature for a minimum of 24 hours prior to use, to achieve best results

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### During Use

- Hold can 15-30cm away from horizontally mounted assemblies while spraying, for best control of coating quality.
- Apply only one wet coat in four layers at 90° between each pass.  
One “pass” is defined as coating the area of the board by applying light strokes from left to right, working downwards until the area is covered.
- After each pass, turn the board 90° and repeat another pass of coating.
- Target a total wet film thickness of approximately 80-150 microns. Spraying too thick increases drying time and can lead to imperfections in coating appearance or curing problems.

### After Use

- Do not invert and spray the aerosol after use. Unlike solvent-based aerosols, since the BoV packaging contains no aerosol propellants, this practice will not clear the nozzle.
- Since the 1H2OAR1™ Aerosol coating cures in air, the nozzle will block up if the coating is allowed to dry in the nozzle.
- Do not remove the nozzle after use. To prevent it blocking, fill the package cap with water and stand the can (with nozzle attached) upside down in the water-filled cap until re-use in the same work session.
- Each can is supplied with 3 identical nozzles. If a nozzle becomes clogged, it can be replaced with one of the spare nozzles provided.

### Storage

HumiSeal 1H2OAR1™ Aerosol should be stored in its original container in cool, dry conditions. Avoid freezing, since this will compromise performance of the product.

### Caution

Use only in well-ventilated areas to avoid inhalation of vapours. Avoid contact with skin and eyes. Consult MSDS prior to use.

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