

## Electrolube® AFA-S

### Aromatic-Free Acrylic Coating (Spray Grade)

#### DESCRIPTION

**Electrolube® AFA-S** is an acrylic conformal coating formulated especially for use with selective coating machines using atomized spray applicators, and manual HVLP spray gun. The coating is formulated without the use of hazardous aromatic solvents. It has been designed for the protection of electronic circuitry and meets the requirements of many industry standards. AFA is UL recognized, achieving UL94 V-0.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

#### FEATURES AND BENEFITS

- Fast touch dry time; specifically formulated for use in atomized spray applicators and HVLP spray guns
- Outstanding salt-mist resistance and excellent adhesion to a variety of substrates
- Transparent coating with excellent clarity and UV resistance; ideal for LED applications
- Reduces operational hazards; free from aromatic solvents such as Toluene and Xylene

#### APPROVALS

Standard	Status
RoHS Compliant (2015/863/EU)	Yes
IPC-CC-830	Meets Requirements
UL Approval	UL746-QMJU2 (File: E138403)

#### PRODUCT INFORMATION

Please contact your customer service representative for information on available package sizes.

**PHYSICAL PROPERTIES**

Category	Results
<b>Liquid Properties</b>	
Appearance	Pale Colored Liquid
Density @ 20 °C (g/mL)	0.84
VOC Content	85%
Flash Point (°C)	Approximately 33
Solid Content	15 ± 2%
Viscosity (mPa.s @ 25 °C)	60 to 80
Touch Dry	10 to 15 minutes
Cure Time 25 °C 70 °C	24 hours 30 minutes
Coverage @ 25µm	6 m <sup>2</sup> /L
<b>Dry Film Coating</b>	
Color	Colorless
Operating Temperature Range (°C)	-65 to 125
Flammability	UL94 V-0
Thermal Cycling (IPC-CC-830B)	Meets Requirements
Coefficient of Expansion (ppm)	130
Dielectric Strength (kV/mm)	155
Dielectric Constant	2.5
Surface Insulation Resistance (Ω)	1 x 10 <sup>15</sup>
Comparative Tracking Index (Volts)	>300
Dissipation Factor @ 1MHz, 25 °C	0.01
Moisture Resistance (IPC-CC-830B)	Meets Requirements

## APPLICATION GUIDELINES

AFA-S has been specifically designed for spray applications. The thickness of the coating depends on the application parameters (typically 25 to 75 microns). Temperatures of less than 16 °C or relative humidity in excess of 75% are unsuitable for its application. As is the case for all solvent based conformal coatings, adequate extraction should be used (refer to SDS for further information).

Although AFA-S displays outstanding adhesion to a variety of substrates, it is recommended that substrates should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion to the substrate is achieved and to prevent flux residues causing corrosion on the PCB. In a 'no-clean' assembly process, the user should evaluate materials compatibility to ensure the combination of materials is fit for purpose and capable of withstanding the expected end-use environment. We manufacture a range of cleaning products using both hydrocarbon solvent and aqueous technology, which all produce results within Military specification.

## APPLICATION GUIDELINES - BULK

### Spraying - Bulk

AFA-S has been specifically formulated for use with selective coating machines using atomized spray valves and manual HVLP style spray-guns. The material is supplied in a convenient, ready to use form, removing the need for on-site mixing and eliminating opportunities for error and variation in process. Optimum fluid pressures, valve settings, application speeds etc. will depend upon many factors and will vary from machine to machine and from circuit board to circuit board. Initial tests should be conducted to establish the correct parameters to achieve the desired coating application.

## TYPICAL PRODUCT APPLICATION

### Brushing

Ensure that the coating material has been agitated thoroughly and has been allowed to settle for at least 2 hours at ambient temperature. When the brushing operation is complete the boards should be placed in an air-circulating drying cabinet and left to dry. Brushing is only advised for touch-up or rework application.

## INSPECTION

AFA-S contains a UV trace, which allows inspection of the PCB after coating to ensure complete and even coverage; the stronger the reflected UV light, the thicker the coating layer is. UV light in the region of 375nm should be used for inspection.

**ADDITIONAL INFORMATION**

**Shelf Life:**

Description	Shelf Life
AFA-S Conformal Coating	24 Months
ULS Removal Solvent	
Bulk	72 Months
Aerosol	36 Months

**SAFETY & WARNING**

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

**CONTACT INFORMATION**

[www.macdermidalpha.com](http://www.macdermidalpha.com)

<p><b>North America</b> 140 Centennial Avenue Piscataway, NJ 08854 1.800.367.5460</p>	<p><b>Europe</b> Ashby Park Coalfield Way Ashby de la Zouch Leicestershire, LE65 1JR, UK 44.01530.41960</p>	<p><b>Asia</b> 8/F., Two Sky Parc 51 Hung To Road Kwun Tong, Kowloon, Hong Kong, SAR China 852.2500.5365</p>
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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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