# AFA-FV
## Aromatic-Free Acrylic Coating (Film-Coat: High Solids)

AFA-FV is a high solids acrylic coating designed for application with heated, non-atomised film-coat applicators. The coating is formulated without the use of hazardous aromatic solvents and has been designed for the protection of electronic circuitry, meeting the requirements of many industry standards. AFA is UL recognised, achieving UL94 V-0.

- High viscosity version; specially formulated for use in non-atomised, heated film-coat applications
- Transparent coating with excellent clarity and UV resistance; ideal for LED applications
- Outstanding salt-mist resistance and excellent adhesion to a variety of substrates
- Reduces operational hazards; free from aromatic solvents such as Toluene and Xylene

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|---|---|---|
| **Approvals** | **RoHS-2 Compliant (2011/65/EU):** | **Yes** |
| | **IPC-CC-830:** | **Meets Requirements** |
| | **UL746-QMJU2:** | **Approved File Number: E138403** |
| **Liquid Properties** | Appearance: | Pale Coloured Liquid |
| | Density @ 20°C (g/ml): | 0.88-0.92 |
| | VOC Content: | 73-77% |
| | Flash Point: | Approx. -7°C |
| | Solids content: | 23-27% |
| | Viscosity (mPa s @ 25°C): | 95-100 |
| | Touch Dry (200µm Wet Film Thickness): | 10 minutes |
| | Recommended Curing Time: | 24 Hours @ 25°C<br>30 Mins @ 70°C |
| | Coverage @ 25µm: | $8m^2$ per litre |
| **Dry Film Coating** | Colour: | Colourless |
| | Operating Temperature Range: | -65°C to +125°C |
| | Flammability: | UL94 V-0 |
| | Thermal Cycling (IPC-CC-830B): | Meets Requirements |
| | Coefficient of Expansion: | 130ppm |
| | Dielectric Strength: | 45kV/mm |
| | Dielectric Constant: | 2.5 |
| | Surface Insulation Resistance: | $1 \times 10^{15}$ Ω |
| | Comparative Tracking Index: | >300 Volts |
| | Dissipation Factor @ 1MHz, 25°C: | 0.01 |
| | Moisture Resistance (IPC-CC-830B): | Meets Requirements |



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| Description | Packaging | Order Code | Shelf Life |
|---|---|---|---|
| AFA-FV Conformal Coating | 5 Litre | AFAFV05L | 24 Months |
| Removal Solvent | 1 Litre Bulk | ULS01L | 72 Months |
| | 5 Litre Bulk | ULS05L | 72 Months |
| | 25 Litre Bulk | ULS25L | 72 Months |
| AFA Gel | 35ml syringe | AFAG35SL | 24 Months |

## Directions for Use

AFA-FV has been specifically designed for spray applications. The thickness of the coating depends on the application parameters (typically 25-75 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 MSDS for further information).

Although AFA-FV 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. Electrolube manufacture a range of cleaning products using both hydrocarbon solvent and aqueous technology, which all produce results within Military specification.

## Spraying - Bulk

AFA-FV has been specifically formulated for use with selective coating machines using heated non-atomised or film-coating applicators. 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. Ideally, AFA-FV should be heated to 40ºC to obtain the optimum viscosity for application through selective coating machines. 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.

## 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-FV 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.

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