

## ALPHA<sup>®</sup> EF-6808HF-P

Halogen-Free, Low Solids, Alcohol Based No-Clean Liquid Soldering Flux

### DESCRIPTION

**ALPHA EF-6808HF-P** is a halogen-free, low solids, alcohol based, no-clean flux for use in a variety of automated and manual soldering applications. While effective on many types of assemblies, this flux has been found to exhibit excellent hole fill on assemblies with high-density components. **ALPHA EF-6808HF-P** is highly reliable and complies with all current halogen-free industry standards.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

### APPLICATION GUIDELINES

**Preparation:** In order to maintain consistent soldering performance and electrical reliability, it is important to begin the process with circuit boards and components that meet established requirements for solderability and ionic cleanliness. It is suggested that assemblers establish specifications on these items with their suppliers and that suppliers provide Certificates of Analysis with shipments and/or assemblers perform incoming inspection. A common specification for the ionic cleanliness of incoming boards and components is 10 µg/in<sup>2</sup> maximum, as measured by an Omegameter with heated solution.

Care should be taken in handling the circuit boards throughout the process. Boards should always be held at the edges. The use of clean, lint-free gloves is also recommended.

**Control:** ALPHA EF-6808HF-P flux should be applied by spray fluxing application. A uniform coating of flux is essential to successful soldering. When applying flux, it is important to run a series of tests to ensure that the flux is being applied uniformly, that it is penetrating from top to bottom of the board on all holes to be soldered and to make sure that excessive amounts of flux are not being applied. There are various methods for conducting these tests. Consult with your local Customer Technical Service Representative for more information. Depending on alloy and production, user could utilize below table for soldering reference.

**Residue Removal:** ALPHA EF-6808HF-P is a no-clean flux and the residues are designed to be left on the board. If desired, flux residues can be removed with ALPHA 2110 saponifier cleaner and with other commercially available solvent cleaners and saponifier cleaners.

**HALOGEN STATUS**

| Halogen Standards  |   |   |        |
|--|---|---|--------|
| Standard   | Requirement   | Test Method   | Status |
| <b>IEC 61249-2-21</b>  | Post soldering residues contain <990ppm each or total <1500ppm Br or Cl from flame retardant source | <b>TM EN 14582</b><br>Solids extraction per IPC TM 2.3.34 | PASS   |
| <b>JEITA ET-7304</b><br>Definition of Halogen Free Soldering Materials     | <1000ppm Br,Cl, F in solder material solids   |   | PASS   |
| <b>JEDEC</b><br>A Guideline for Defining "Low Halogen" Electronic products | Post soldering residues contain <1000ppm Br or Cl from flame retardant source                       |   | PASS   |

**TECHNICAL DATA**

| Physical Properties              | Typical Values | Parameters/<br>Test Method   | Typical Values |
|----------------------------------|----------------|------------------------------|----------------|
| Appearance                       | Clear, Amber   | Flash Point (T.C.C.)         | 17 °C          |
| Solids Content, wt/wt            | 5%             | Recommended Thinner          | ALPHA 425      |
| Specific Gravity @ 25 °C (77 °F) | 0.793          | Shelf Life                   | 12 months      |
| Acid Number (mg KOH/g)           | 21             | IPC J-STD-004(B) Designation | ROL0           |

**CORROSION & ELECTRICAL TESTING**
**Corrosion Test**

| Test |  | Requirement for ROL0          | Results |
|------|--|-------------------------------|---------|
| IPC  | Silver Chromate Paper<br>IPC-TM 650 Test Method 2.3.33     | No detection of halide        | PASS    |
|      | Copper Mirror Test<br>IPC-TM 650 Test Method 2.3.32        | No complete removal of copper | PASS    |
|      | Copper Corrosion Test<br>IPC-TM650 Test Method 2.6.15      | No evidence of corrosion      | PASS    |
| JIS  | Copper Corrosion Test<br>JIS Z 3197-1999 Test Method 8.4.1 | No evidence of corrosion      | PASS    |

**IPC J-STD-004B Surface Insulation Resistance**

| Test   | Requirements<br>( $<1.0 \times 10^8$ allowed<br>during initial 24 hrs.) | Results (min. of all measurements recorded) |                             |        |
|--|---|---|-----------------------------|--------|
|  |   | < 24 Hrs                                    | 24 to 168 Hrs               | Visual |
| "Comb-Down"<br>Un-cleaned  | $>1.0 \times 10^8 \Omega$   | $3.7 \times 10^8 \Omega$                    | $6.9 \times 10^8 \Omega$    | PASS   |
| "Comb-Up" Un-<br>cleaned   | $>1.0 \times 10^8 \Omega$   | $7.9 \times 10^8 \Omega$                    | $4.8 \times 10^9 \Omega$    | PASS   |
| Control Boards   | $>1.0 \times 10^9 \Omega$   | $5.9 \times 10^{10} \Omega$                 | $5.7 \times 10^{10} \Omega$ | NA     |
| IPC Test Condition (per J-STD-004B TM2.6.3.7): IPC B-24 coupons, 12V, 40 °C, 90% RH, measurements recorded @ 20min intervals |   |   |                             |        |

## RECYCLING SERVICES

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area.



## 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)

|   |   |  |
|---|---|--|
| <b>North America</b><br>140 Centennial Avenue<br>Piscataway, NJ 08854<br>1.800.367.5460 | <b>Europe</b><br>Unit 2, Genesis Business Park<br>Albert Drive<br>Woking, Surrey, GU21 5RW, UK<br>44.01483.758400 | <b>Asia</b><br>8/F., Two Sky Parc<br>51 Hung To Road<br>Kwun Tong, Kowloon,<br>Hong Kong, SAR China<br>852.2500.5365 |
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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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