

ALPHA[®] WS-819 Paste Flux

Water-Soluble Paste Flux

DESCRIPTION

ALPHA WS-819 is a halide-free paste flux with high resistance to BGA voids, high spread, and cleanability with water based cleaning systems.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- High spread/wetting, lead-free paste compatible with lead-free alloys and surface finishes
- High reflow yield with IPC-7095 Class 3 voiding performance when used to solder BGA components
- Cleanable with water based cleaning systems

PRODUCT INFORMATION

| | |
|----------------------------------|--|
| <u>Packaging Sizes:</u> | 30cc syringe |
| <u>Environmental Compliance:</u> | Complies with RoHS Directive EU/2015/863 |

APPLICATION GUIDELINES

ALPHA WS-819 was formulated to meet the requirements of water soluble applications. ALPHA WS-819 was developed to offer best in class resistance to heat and humidity variations. It also offers exceptional post reflow cleanability and low BGA voiding.

This paste flux is designed to enable users of ALPHA WS-609, ALPHA WS-709 and ALPHA WS-809 and other leading water soluble paste & flux brands to comply with RoHS and customer based demand for lead-free materials.

TECHNICAL DATA

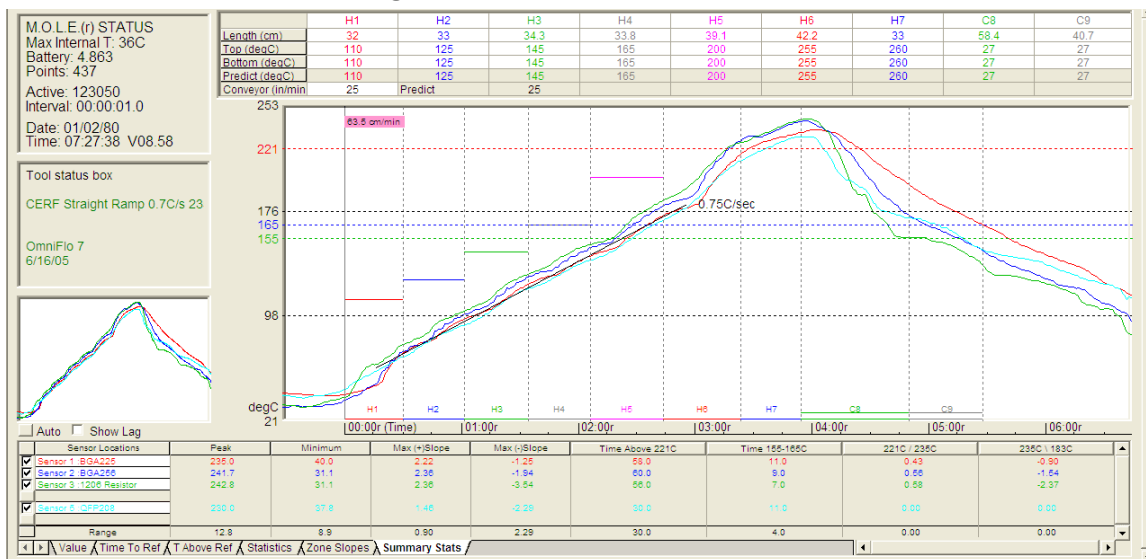
| Category | Results | Procedure/Remarks |
|---|--|-------------------|
| Chemical Properties | | |
| Activity Level | ORH0 | IPC J-STD-004 |
| Halide Content | Halide-Free | By Titration |
| Electrical Properties | | |
| SIR (IPC 7 days @ 85 °C / 85% RH) | Pass; $\geq 1 \times 10^8$ ohm | IPC J-STD-004 |
| Physical Properties | | |
| Appearance (after reflow) | Light Yellowish Flux Residue (before water wash) | |
| Viscosity (10rpm at 25 °C by Malcom Viscometer) | 300 to 500 Poise | |

REFLOW PROFILES

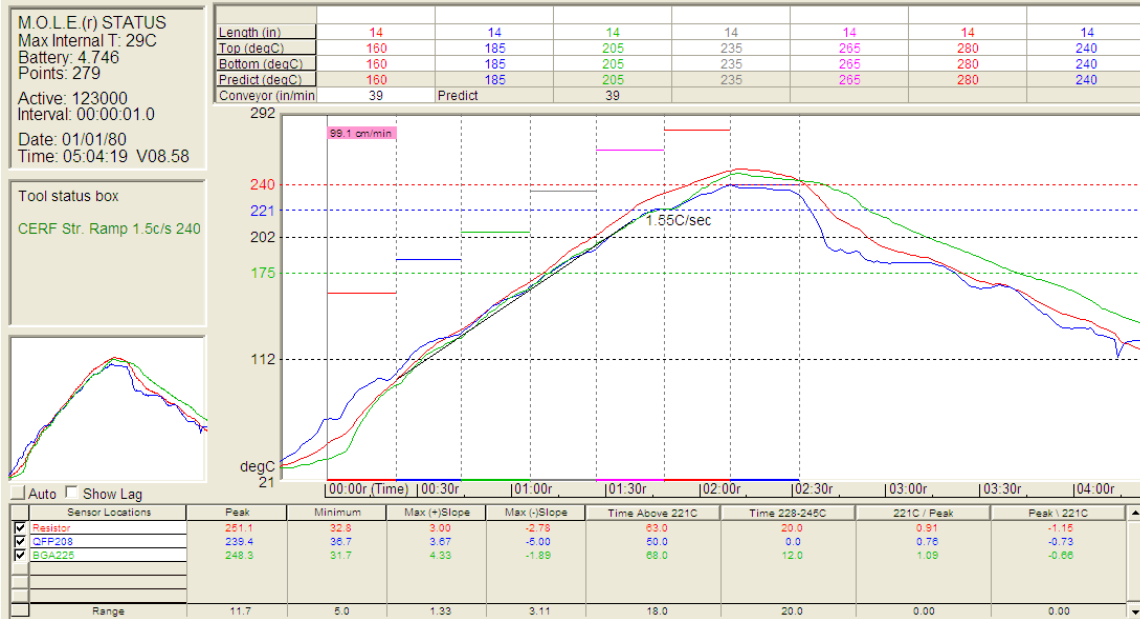
Use clean, dry air if soak temp ≥ 160 °C and soak time > 45 to 60 seconds.

Nitrogen is recommended for longer soak profiles (60 to 180 seconds). Use of air for long soak profiles has resulted in dull, grainy joints, and possible de-wetting of solder joints.

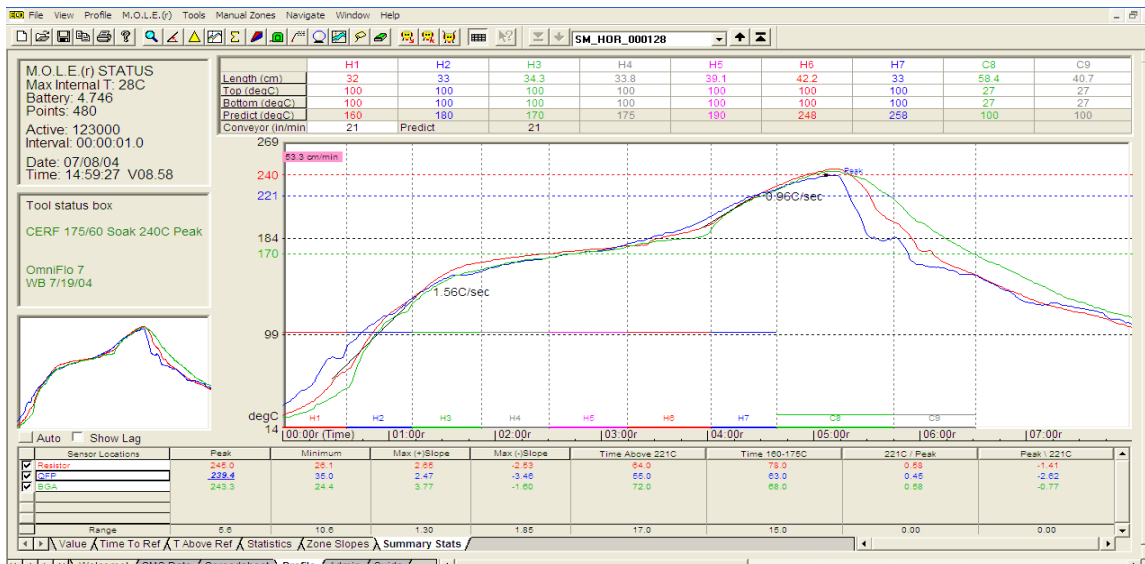
Figure 1: Reflow Profiles Tested using Clean, Dry Air
CERF Straight Ramp 0.7 °C/s 235 °C Peak 60s TAL



**Figure 2: Reflow Profiles Tested using Clean, Dry Air
CERF Straight Ramp 1.5 °C/s 240 °C Peak 60s TAL**



**Figure 3: Reflow Profiles Tested using Clean, Dry Air
CERF 60s Soak @ 175 °C/ 240 °C Peak 60s TAL**



NOTE: The processing guidelines recommended and typical reflow profiles presented were tested in the lab with acceptable performance. Optimization to each board application should still be carried out by users to ensure best results.

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 or [link here](#).



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 at MacdermidAlpha.com/assembly-solutions/knowledge-base.**

STORAGE

The flux should be stored in sealed containers and need not be refrigerated. Shelf life of unopened containers at room temperature (19 to 25 °C / 66 to 77 °F) is 6 months from the manufacturing date. If the material has been chilled, the container should be allowed to reach room temperature before opening in order to prevent moisture condensation from ambient air onto the flux.

CONTACT INFORMATION

To confirm this document is the most recent version, please contact Assembly@MacDermidAlpha.com

www.macdermidalpha.com

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|--|--|---|
| <p>North America 109 Corporate Blvd. South Plainfield, NJ 07080, USA 1.800.367.5460</p> | <p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400</p> | <p>Asia 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100</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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