

ALPHA[®] RF-800T3

No-Clean Flux

DESCRIPTION

ALPHA RF-800T3 is a low solids, no-clean flux formulated with a small percentage of rosin and non-halide activators. This unique rosin activation system promotes excellent wetting to protected copper and solder coated surfaces. **ALPHA RF-800T3** works particularly well with bare copper boards protected with organic or rosin/resin coating and with tin-lead coated PCBs. Post-soldering residues of **ALPHA RF-800T3** is minimal, slightly glossy and can be pin tested without removal.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Highly active for excellent soldering and low defect rates.
- Low level of non-tacky residue to reduce interference with pin testing.
- Cleaning is not required which reduces operating costs.
- Reduces the surface tension between solder mask and solder to significantly reduce solder ball frequency.
- Meets IPC SIR test requirement.

APPLICATION GUIDELINES

Flux Application: ALPHA RF-800T3 flux is formulated to be applied with foam, wave, spray, and mist fluxers. Flux deposition, density, and uniformity are critical to the successful use of low solids no-clean flux. Applying ALPHA RF-800T3 to coating density of 500 to 2000 µg solids/in² is recommended. Preheating the circuit assembly will partially dry the flux, enhance oxide removal, and promote optimum wicking, as well as superior solder joint formation. Degree of preheat is dependent on many variables such as conveyor speed, type of components, and substrates. Entering the solder wave with a top-side temperature of 85 to 115 °C and a bottom-side temperature of 120 to 150 °C is typical.

Control: The foam applicators should be supplied with compressed air, free of oil and water. Maintain flux fluid level sufficiently above the aerator to produce adequate foam height. Adjust air pressure to produce optimum height with foam consisting of uniform bubbles. The addition of flux thinners will be required to replace evaporative losses and maintain the balance in flux composition. Due to the low solids content of ALPHA RF-800T3 Flux, specific gravity is not an accurate measure for assessment. Monitoring and controlling the acid number is recommended

for maintaining the flux composition. The acid number should be controlled between 16 to 20 mgKOH/gm. Controlling by specific gravity is another method to monitor the acid number. The specific gravity control range should be 0.789 to 0.810 at 25 °C. Besides specific gravity, controlled inspection of solder joints secures flux performance. The recommended thinner for the ALPHA RF-800T3 Flux is the ALPHA 800 Additive.

In time, debris and contaminants will accumulate in recirculating type of flux applicators. For consistent soldering performance, dispose of spent flux in accordance with local bylaws, rules, and regulations periodically. After emptying used flux, the reservoir and applicator should be thoroughly cleaned with flux thinner. Refill the reservoir with fresh flux and allow a few minutes to stability before resuming soldering operation.

Residue Removal: Although ALPHA RF-800T3 is designed to be left on the board. If desired, post-soldering residues can be removed with ALPHA 2110 Saponifier by water cleaning equipment.

TECHNICAL DATA

Item	Typical Values	Item	Typical Values
Appearance	Clear amber liquid	Flash Point (T.C.C.)	17 °C
Solids Content, %wt/wt	4.0%	Recommended Thinner	ALPHA 800 Additive
Specific Gravity @ 25 °C (77 °F)	0.794 ± 0.005	Shelf Life (from Date of Mfg.)	540 days
Acid Number (mg KOH/g)	17.0 to 19.5	IPC J-STD-004 Classification	ROLO
Water Extract Resistivity	33,000 ohm-cm	Packaging Size	5 gallons

CORROSION & ELECTRICAL TESTING
Corrosion Test

Test		Requirement	Results
IPC	Silver Chromate Paper (IPC-TM-650 2.3.33)	No color change	PASS
	Copper Mirror Test (IPC-TM-650 2.3.32)	No complete removal of copper	PASS
	Copper Corrosion Test (IPC-TM-650 2.3.15)	No evidence of corrosion	PASS

Surface Insulation Resistance

Test	Condition	Requirement	Result
Comb-Down Uncleaned (IPC J-STD-004)	85 °C/85% RH, 7days	> 1.0 X 10 ⁸ Ω	6.0 X 10 ⁹ Ω
Comb-Up Uncleaned (IPC J-STD-004)	85 °C/85% RH, 7days	> 1.0 X 10 ⁸ Ω	1.2 X 10 ⁸ Ω
Control Boards	85 °C/85% RH, 7days	> 1.0 X 10 ⁸ Ω	1.1 X 10 ⁸ Ω
IPC Test Condition(Per IPC-TM-650 2.6.3.3): -50V, measurement@100V/IPC B-24 board(0.4mm lines, 0.5mm spacing).			

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.**

CONTACT INFORMATION

To confirm this document is the most recent version, please contact
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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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