

ALPHA® NR-215

No Clean Flux

DESCRIPTION

ALPHA NR-215 is an active low-solids, no clean flux. It is formulated with a proprietary mixture of organic activators. Several proprietary additives are formulated into **ALPHA NR-215** which acts to reduce the surface tension between the solder mask and the solder; thereby, dramatically reducing the tendency of solder ball generation.

FEATURES & BENEFITS

- Thermally stable activators provide the lowest solder bridging in a low-solids, no clean flux.
- Reduces the surface tension between solder mask and solder to provide the lowest solder ball frequency of any low solids, no-clean flux.
- Very low level of non-tacky residue to reduce interference with pin testing and exhibit no visible residue.
- Cleaning is not required which reduces operating costs.
- Bellcore compliant for long term electrical reliability.

APPLICATION

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 5µg/in² maximum, as measured by an ionic contamination tester.

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. When switching from one flux to another, the use of a new foam stone is recommended (for foam fluxing), or a thorough purging of the spray fluxing lines and nozzle when fluxing is used.

Conveyors, fingers and pallets should be cleaned. **ALPHA SM-110** Solvent Cleaner has been found to be very useful for these cleaning applications. When foam fluxing, do not use hot fixtures or pallets. Hot fixtures/pallets will deteriorate the foam head.

FLUX APPLICATION: **ALPHA NR-215** is formulated to be applied by foam, wave or spray methods. When foam fluxing, the foam fluxer should be supplied with compressed air which is free of oil and water. Keep the flux tank full at all times. The flux level should be maintained 1 inch to 1-½ inches above the top of the stone. Adjust the air pressure to produce the optimum foam height with a fine, uniform foam head.

A uniform coating of flux is essential to successful soldering. When using the foam or wave method of application, an air knife is recommended after the fluxing operation. An air knife will help ensure that the flux is uniformly distributed across the board and will remove the excess flux.

When spray fluxing, the uniformity of the coating can be visually checked by running a piece of cardboard over the spray fluxer or by processing a board-sized piece of tempered glass through the spray and then through the preheat section.

ALPHA® NR-215

No Clean Flux

HALOGEN STATUS

Item	Typical Values	Item	Typical Values
Appearance	Clear, Colorless Liquid	Flash Point (T.C.C.)	60°F (16°C)
Solids Content, %wt/wt	2.1%	Recommended Thinner	ALPHA 425
Specific Gravity @ 25°C (77°F)	0.799 ± 0.003	Shelf Life (from Date of Mfg.)	360 Days
Acid Number (mg KOH/g)	17.0 ± 1.0	IPC J-STD-004 Designation	ORL0
pH, 5% aqueous solution	3.2	Packaging Size	20 Liters
Pounds Per Gallon	6.8	Bellcore TR-NWT-000078, Issue 3 Compliant	Yes

CORROSION & ELECTRICAL TESTING

CORROSION TEST

Test		Requirement	Results
IPC	Silver Chromate Paper	No Detection of Halide	PASS
	Copper Mirror Test	No Complete Removal of Copper	PASS
	Copper Corrosion Test	No evidence of corrosion	PASS

IPC J-STD-004 SURFACE INSULATION RESISTANCE (All values in ohms)

Test	Requirements	Results
"Comb-Down" Un-cleaned	1.0 x 10 ⁹ minimum	1.3 x 10 ¹⁰
"Comb-Up" Un-cleaned	1.0 x 10 ⁹ minimum	1.2 x 10 ¹⁰
Control Boards	1.0 x 10 ⁹ minimum	2.8 x 10 ¹⁰

IPC Test Condition (per J-STD-004): 85 °C/85%RH/168 Hours/-50V, measurement @ 100V/IPC B-24 board (0.4mm lines, 0.5mm spacing)

BELLCORE SURFACE INSULATION RESISTANCE (All values in ohms)

Test	Requirements	Results
"Comb-Down" Un-cleaned	1.0 x 10 ¹¹ minimum	1.2 x 10 ¹²
"Comb-Up" Un-cleaned	1.0 x 10 ¹¹ minimum	2.5 x 10 ¹¹
Control Boards	2.0 x 10 ¹¹ minimum	8.9 x 10 ¹¹

Bellcore Test Condition (GR-78 CORE, Issue 1): 35 °C/85%RH/120 Hours/-48 volts, measurement @ 100V/25 mil lines/50 mil spacing

ALPHA® NR-215

No Clean Flux

BELLCORE ELECTROCHEMICAL MIGRATION RESISTANCE (All values in ohms)

Test	SIR (Initial)	SIR (Final)	Requirement	Result	Visual Result
"Comb-Up" Un-cleaned	1.5 x 10 ¹⁰	2.0 x 10 ¹⁰	SIR (Initial) / SIR (Final) < 10	PASS	PASS
"Comb-Down" Un-cleaned	2.2 x 10 ¹⁰	2.0 x 10 ¹⁰	SIR (Initial) / SIR (Final) < 10	PASS	PASS
<i>Bellcore Test Condition (per-NWT-000078, Issue 3): 85 °C/85%RH/500 Hours/10V, measurement @ 100V/IPC B-25 B Pattern (12.5 mil lines, 12.5 mil spacing)</i>					

SAFETY

Please refer to the Safety Data Sheet as the primary source of health and safety information. The most recent version of the SDS is available from AlphaAssembly.com.

Observe standard precautions for handling and use. Use in well ventilated areas, DO NOT SMOKE. Avoid prolonged or repeated contact with the skin by the use of solvent resistant gloves.

Flammable, keep away from sparks and open flames. Remember, empty containers can still be a flammable hazard from residual vapors.

Remove skin splashes by immediate washing with soap and water.

In order to carry out your full COSHH assessment, consult the Materials Safety Data Sheet (MSDS).

CONTACT INFORMATION

To confirm this is the most recent issue, please contact Alpha Assembly Solutions
AlphaAssembly.com

<p>North America 300 Atrium Drive Somerset, NJ 08873, USA 800.367.5460</p>	<p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 01483.758400</p>	<p>Asia 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100</p>
---	---	---

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 directory assistance Chemtrec 1 - 800 - 424 - 9300.

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. No statement or recommendation shall constitute a representation unless set forth in an agreement signed by officers of seller and manufacturer. NO WARRANTY OR MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE. The following warranty is made in lieu of such warranties and all other warranties, express, implied, or statutory. Products are warranted to be free from defects in material and workmanship at the time sold. The sole obligation of seller and manufacturer under this warranty shall be to replace any product defective at the time sold. Under no circumstances shall manufacturer or seller be liable for any loss, damage or expense, direct or consequential, arising out of the inability to use the product. Notwithstanding the foregoing, if products are supplied in response to a customer request that specifies operating parameters beyond those stated above, or if products are used under conditions exceeding said parameters, the customer by acceptance or use thereof assumes all risk of product failure and of all direct, indirect and consequential damages that may result from use of the products under conditions, and agrees to exonerate, indemnify and hold harmless MacDermid Incorporated therefrom. No suggestion for product use nor anything contained herein shall be construed as a recommendation to use any product in infringement of any patent rights, and seller and manufacturer assume no responsibility or liability for any such infringement.

® Registered Trademark of MacDermid Performance Solutions.™ Trademark of MacDermid Performance Solutions.
© Platform Specialty Products Corporation and its subsidiaries 2016.