

SM408-3

ALPHA NR200

NO-CLEAN/NO RESIDUE FLUX

FEATURES

UNIQUE LOW SOLIDS FORMULATION

HIGH ACTIVITY

HALIDE FREE

NO VISIBLE RESIDUE

ENHANCED FOAMING PROPERTIES

MEETS BELLCORE REQUIREMENTS

BENEFITS

ELIMINATES THE NEED FOR CLEANING

GOOD SOLDERING; LOW DEFECTS

HIGH SIR VALUES

ACCURATE PIN TESTING AND ENHANCED BOARD COSMETICS

REDUCED DEFECTS

HIGH RELIABILITY ASSEMBLIES

DESCRIPTION

ALPHA NR200 is a halide-free, rosin/resin free, low solids, no-clean flux for wave soldering through-hole, mixed technology and surface mount assemblies. It has a unique formulation that provides high activity with virtually no visible residue with most solder masks. **ALPHA NR200** flux leaves a tack-free surface with high surface insulation resistance. **ALPHA NR200** features enhanced foam properties and low odor.

ALPHA NR200 meets Bellcore specification TR-NWT-000078.

USE

ALPHA NR200 flux utilizes a unique blend of organic activators which significantly reduces solder bridging, icicling and solder balling on difficult to solder assemblies.

ALPHA NR200 flux can be applied by foam,, by spray or by wave techniques. Topside preheat temperatures of 180° F-210°F (80°C-100°C) are recommended. Higher preheat temperatures can lead to premature volatilization of the activators, leading to less than optimal soldering performance. Best results are obtained using the following guidelines:

- Maintain a consistent foam head, spray volume or wave height.
- Replace the flux daily unless a sealed, self contained system is available.
- Adjust the acid number as determined with the Alpha Flux Solids Control Kit #3 to 18.0 (range +5, -2) with thinner 425.
- Add fresh **ALPHA NR200** to maintain the appropriate flux level.
- Regularly clean the fluxing equipment. Equipment can be easily cleaned with sponge and water. For foam fluxers, the stone should be cleaned with 425 thinner.

ALPHA NR200 flux can be maintained by monitoring specific gravity, but control by acid number determination is

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recommended.

PHYSICAL PROPERTIES

Appearance	Clear liquid
Solids Content, Wt/Wt ¹	2.0%
Specific Gravity @ 77°F (25°C)	0.805 ± 0.003
Acid Number (mg KOH/gm)	18.0 ± 1.0
Flash Point (T.C.C.)	58°F (14°C)
Alpha Thinner	425

CORROSION AND ELECTRICAL TESTING

CORROSION TESTING

<u>Test</u>	<u>Requirement</u>	<u>Results</u>
Copper Mirror (IPC/Bellcore Method)	No complete removal of copper	Passes
Halide (IPC/Bellcore Method)	No detection of halide	Passes

SURFACE INSULATION RESISTANCE (All Values in ohms)

<u>Method</u>	<u>Conditions</u>	<u>Requirement</u>	<u>Results</u>
IPC-SF-818, Class 3	85°C/85% RH 7 days	1.0 X 10 ⁸ min.	2.0 X 10 ⁹

Bellcore-TR-NWT-000078, Issue 3:

Comb Pattern "Up" (uncleaned)	35°C/85% RH 5 days (4 days with bias voltage)	1.0 X 10 ¹¹ min.	1.9 X 10 ¹²
Comb Pattern "Down" (uncleaned)	35°C/85% RH 5 days (4 days with bias voltage)	1.0 X 10 ¹¹ min.	1.4 X 10 ¹²
Control Boards	35°C/85% RH 5 days (4 days with bias voltage)	2.0 X 10 ¹¹ min.	8.7 X 10 ¹²

ELECTROMIGRATION (Per Bellcore TR-NWT-000078, Issue 3, All Values in ohms)

<u>Method</u>	<u>Conditions</u>	<u>SIR (Init.)*</u>	<u>SIR (Final)*</u>	<u>Visual</u>
Comb Pattern "Up"	85°C/85% RH 500 Hrs. with 10 V. bias	1.9 X 10 ¹⁰	1.9 X 10 ¹⁰	No dendrites or corrosion
Comb Pattern "Down"	85°C/85% RH 500 Hrs. with 10 V. bias	1.8 X 10 ¹⁰	1.9 X 10 ¹⁰	No dendrites or corrosion

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SAFETY

Flammable liquid.

Standard precautions should be observed, such as use in well ventilated areas and avoidance of prolonged or repeated contact with the skin. Safety glasses and neoprene gloves should be used when handling.

PACKAGING

ALPHA NR200 is available in 1, 5 and 55 gallon containers.