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MacDermid Alpha ELECTRONICS SOLUTIONS

TECHNICAL DATA SHEET

ALPHA® NR200

No-Clean / No Residue Flux

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.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

Features	Benefits
Unique Low Solids Formulation	Eliminates the need for Cleaning
High Activity	Good Soldering; Low Defects
Halide Free	High Sir Values
No Visible Residue	Accurate Pin Testing and Enhanced Board Cosmetics
Enhanced Foaming Properties	Reduced Defects
Meets Bellcore Requirements	High Reliability Assemblies

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APPLICATION GUIDELINES

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 to 210 °F (80 to 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:

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

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

TECHNICAL DATA

Item	Typical Values	Item	Typical Values
Appearance	Clear Colorless Liquid	Recommended Thinner	ALPHA 425
Solids Content, % wt/wt	2.0	Self-Life (from date of mfg.)	540 Days
Specific Gravity @ 25 °C (77 °F)	0.805 ± 0.003	IPC J-STD-004 Designation	ORM0
Acid Number (mg KOH/g)	18.0 ± 1.0	Package Size	1, 5 & 55 Gallons
Flash Point (T.C.C)	58 °F (14 °C)		

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CORROSION & ELECTRICAL TESTING

Corrosion Testing

Test		Requirements for M0	Results
IPC	Silver Chromate Paper IPC-TM-650 Test Method 2.3.33	No detection of halide	PASS
	Copper Mirror Test IPC-TM 650 Test Method 2.3.32	<50% Breakthrough in test area	PASS

J-STD-004A Surface Insulation Resistance

Test	Conditions	Requirement	Results
"Comb-Down" Un-cleaned	85 °C/85% RH, 7 days	>1.0 x 10^8 Ω	2.6 x 10^9 Ω
"Comb-Up" Un-cleaned"	85 °C/85% RH, 7 days	>1.0 x 10^8 Ω	5.0 x 10^9 Ω
Control Boards	85 °C/85% RH, 7 days	>1.0 x 10^8 Ω	7.3 x 10^9 Ω
IPC Test Condition (per J-STD-004A): -50V, measurement @ 100V/IPC B-24 board (0.4 mm lines, 0.5 mm spacing).			

Bellcore Surface Insulation Resistance

Test	Conditions	Requirement	Results
"Comb-Down" Un-cleaned	35 °C/85% RH, 5 days	>1.0 x 10^{11} Ω	3.4 x 10^{11} Ω
"Comb-Up" Un-cleaned"	35 °C/85% RH, 5 days	>1.0 x 10^{11} Ω	6.3 x 10^{12} Ω
Control Boards	35 °C/85% RH, 5 days	>2.0 x 10^{11} Ω	2.2 x 10^{12} Ω
Bellcore Test Condition (per GR 78-CORE, Issue 1): 48 Volts, measurement @ 100V/25 mil lines/50 mil spacing.			

Bellcore Electromigration

Test	SIR (Initial)	SIR (Final)	Requirement	Result	Visual Result
"Comb-Down" Un-cleaned	1.9 x 10^{10} Ω	1.9 x 10^{10} Ω	SIR (Initial) / SIR (Final) <10	PASS	PASS
"Comb-Up" Un-cleaned"	1.8 x 10^{10} Ω	1.9 x 10^{10} Ω	SIR (Initial) / SIR (Final) <10	PASS	PASS
Bellcore Test Condition (per TR-NWT-000078 Issue 3): 85 °C/85% RH/500 Hours/10V, measurement @ 100V/IPC B-25B Pattern (12.5 mil lines, 12.5 mil spacing).					

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TECHNICAL DATA SHEET

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

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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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