

ALPHA E191/1

No-Clean Flux

DESCRIPTION

ALPHA E191/1 is a very efficient halide-free and rosin/resin-free, low solids, no-clean flux. After soldering, a very small amount of barely visible residue is left which is tack-free and non-corrosive.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- Non-Corrosive Residues. High SIR Assemblies.
- Fast Wetting. Defect-Free Soldering.
- Tack-Free Residues. Accurate Pin-Testing.

PRODUCT INFORMATION

Packaging: In the United States, ALPHA E191/1 is available in 1, 5, and 55 gallon containers. In the United Kingdom, it is available in 20 liter containers.

APPLICATION GUIDELINES

ALPHA E191/1 flux is engineered for foam, spray, and wave applications. If foaming, it is recommended that the flux level be 1½ inches above the top of the stone. Topside preheat temperatures of 80 to 105 °C are recommended. ALPHA E191/1 flux can be maintained by using Alpha's Flux Solids Control Kit #2.

TECHNICAL DATA

Category	Results
Physical Properties	
Appearance	Clear, Colorless Liquid
Solids Content, % wt/wt	2.1%
Specific Gravity @ 25 °C	0.799
@ 20 °C	0.804
Acid Number (mg KOH/g)	15.9 to 18.2
Flash Point (TCC)	16 °C
Thinners	
UK	Flowsolder Thinner
US	425

CORROSION & ELECTRICAL TESTING
Corrosion Testing

Test Condition	Requirements	Results
Silver Chromate Paper Test	No Detection of Halide	Passes
Copper Mirror Test	No Complete Removal of Copper	Passes
IPC Copper Corrosion Test		Type "L"

Surface Insulation Resistance (All values in ohms)

Test Condition	Requirement	Result
Bellcore "Comb-Down" - Uncleaned	1.0×10^{11} minimum	9.5×10^{11}
Bellcore "Comb-Up" - Uncleaned	1.0×10^{11} minimum	6.3×10^{11}
Bellcore Control Board	2.0×10^{11} minimum	8.9×10^{11}
IPC J-STD-004 Comb-Down - Uncleaned	1.0×10^8 minimum	Being tested
IPC-J-STD-004 Comb-Up - Uncleaned	1.0×10^8 minimum	Being tested
IPC J-STD-004 Control Board	1.0×10^9 minimum	Being tested

Test Condition	Requirement	Result
Bellcore Test Condition (per TR-NWT-000078, Issue 3): 35 °C/85%RH/120 Hours/-48 volts, measurement @ 100V/25 mil lines/50 mil spacing.		
IPC Test Condition (per J-STD-004): 85 °C/85%RH/168 Hours/-50V, measurement @ 100V/IPC B-24 board (0.4 mm lines, 0.5 mm spacing).		

Electromigration (All values in ohms)

Test Condition	SIR (Initial)	SIR (Final)	Requirement	Result	Visual Result
Bellcore "Comb-Up" Uncleaned	1.5 x 10 ¹⁰	2.0 x 10 ¹⁰	SIR (Initial)/SIR (Final) < 10	Pass	No Dendrites or Corrosion
Bellcore "Comb-Down" Uncleaned	2.2 x 10 ¹⁰	2.0 x 10 ¹⁰	SIR (Initial)/SIR (Final) < 10	Pass	No Dendrites or Corrosion
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).					

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
Assembly@MacDermidAlpha.com
www.macdermidalpha.com

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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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