

ALPHA[®] SLS 23F

No-Clean Flux

DESCRIPTION

ALPHA SLS 23F is a no-clean flux developed to meet the industry's need for high speed automation and high reliability while reducing cost and potential environmental impact. The unique non-rosin, halide-free formulation of **ALPHA SLS 23F** promotes excellent wetting and solder joint formation of leaded and SMT components to bare copper and solder – coated surfaces. Thermo-kinetic forces of the soldering process transform **ALPHA SLS 23F** to vapors and near invisible non-conductive, non-corrosive coating. Pin testing and high surface insulation resistance are both achievable without cleaning.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

APPLICATION GUIDELINES

ALPHA SLS 23F is formulated to be applied with foam, wave, spray and mist fluxers. Flux deposition density and uniformity are critical to successful use of low solids no-clean fluxes. Applying ALPHA SLS 23F flux to a dry flux coating density of 500 to 1500 $\mu\text{g}/\text{in}^2$ 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, types of components and substrates. Entering the solder wave with a top-side temperature of 90 to 115 °C is typical.

The foam applicators should be supplied with compressed air, free of oil and water. Maintain flux fluid level sufficiently above the aerator stone to produce adequate foam height. Adjust air pressure to produce optimum height with foam consisting of uniform bubbles.

Flux applicators will require the addition of flux thinner to replace evaporative losses and maintain the balance in flux composition. Due to the very low solids of ALPHA SLS 23F, specific gravity is not an accurate measure for assessing the solids content. Monitoring and controlling the acid number is recommended for maintain the flux composition. The acid number should be controlled between 16 to 18 mg KOH/g. The acid number can be checked using ALPHA's Low Solids Flux Control Kit #1. Refer to the table below for thinner additions.

Acid Number	Thinner to be Added
17 mg KOH/g	0 mL / liter
18 mg KOH/g	45 mL / liter
19 mg KOH/g	100 mL / liter

Acid Number	Thinner to be Added
20 mg KOH/g	155 mL / liter
21 mg KOH/g	210 mL / liter
22 mg KOH/g	265 mL / liter
23 mg KOH/g	320 mL / liter
24 mg KOH/g	375 mL / liter

TECHNICAL DATA

Item	Typical Values	Item	Typical Values
Appearance	Clear Colorless Liquid	Flash Point (T.C.C.)	60 °F / 15 °C
Solids Content, wt/wt	1.8%	Recommended Thinner	23F Additive
Specific Gravity @ 25 °C (77 °F)	0.793 ± 0.005	Shelf Life (from Date of Mfg.)	360 days
Acid Number (mg KOH/g)	17.0 ± 1.0	Packaging Size	1, 5, 55 gallons
% Chloride	None	Water Extract Resistivity	26,800 Ohm-cm
Pounds per Gallon	6.6		

CORROSION & ELECTRICAL TESTING
Corrosion Test

Test	Requirement	Results
Silver Chromate Paper	Mil-F-14256E	PASS
Copper Mirror	IPC TM-650 (2.3.32)	PASS

Bellcore Surface Insulation Resistance

Test	Requirements
"Comb-Up" Un-cleaned	2.47 X 10 ¹¹ Ohms
"Comb-Down" Un-cleaned	3.46 X 10 ¹¹ Ohms
"Comb-Down" Cleaned in Trichloroethylene @ 25 °C	1.14 X 10 ¹³ Ohms
Minimum Required	9.27 X 10 ¹⁰ Ohms
Bellcore TR-TSY-000078 SIR; Comb Pattern 25 mil lines, 50 mil spacing	

IPC TM-650 Surface Insulation Resistance

Test	Requirements
7 Day - Minimum Required	1.0 X 10 ⁸ Ohms
7 Day - Cleaned	2.73 X 10 ⁹ Ohms
7 Day - Uncleaned	1.86 X 10 ⁹ Ohms

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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