

# ALPHA<sup>®</sup> FLS0016T-5

No Rosin, Low Solid, High Reliability Flux

## DESCRIPTION

**ALPHA FLS0016T-5** is a no rosin, low solid and high reliability flux. After wave soldering, **ALPHA FLS0016T-5** leaves only a low level of flux residues which reduces interference with pin testing and results to excellent board cosmetics.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

## APPLICATION GUIDELINES

**Flux Application:** ALPHA FLS0016T-5 is suggested to be applied by foam or spray application. A proper preheat setting will help to achieve a goal of best soldering performance. Please refer below recommend preheat setting:

Operating Parameter	Recommendation
Flux application	Foam, Spray
Top-Side Preheat Temperature (Direct Wave Soldering)	Range: 70 to 100 °C; Optimum: 80 to 90 °C
Bottom side Preheat Temperature (Direct Wave Soldering)	Range: 80 to 140 °C; Optimum: 95 to 120 °C
Top-Side Preheat Temperature Above Aperture Opening (Selective Soldering)	Range: 50 to 100 °C; Optimum: 65 to 80 °C
Bottom side Preheat Temperature at Aperture Opening (Selective Soldering)	Range: 70 to 140 °C; Optimum: 80 to 120 °C
These are general guidelines which have proven to yield excellent results; however, depending upon your equipment, components, and circuit boards, your optimal settings may be different. To optimize your process, it is recommended to perform a design experiment, optimizing the most important variables (amount of flux applied, conveyor speed, topside preheat temperature, solder pot temperature and board orientation).	

**Control:** 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 the optimum height with foam consisting of small uniform bubbles.

During use, the acid number of the flux should be checked periodically. This can be accomplished using ALPHA Control Kit #3 or Titration Kit #9T for acid number monitoring. Evaporated solvent should be replenished by the addition of ALPHA 425 Flux Thinner to recover the nominal acid number of 10.4 mgKOH/gm. ALPHA FLS0016T-5 acid number control range for foaming application is 7.4 to 11.4 mgKOH/gm or 9.4 to 14.4 mgKOH/gm for spray application.

In time, debris and contaminants will accumulate in the flux. For consistent soldering performance, replace flux periodically. After dumping used flux, the reservoir and aerator stone should be thoroughly cleaned with flux thinner. Refill the reservoir with fresh flux and allow a few minutes for foam to stabilize before resuming solder operation.

**Residue Removal:** ALPHA FLS0016T-5 is a no-clean flux, and the residues are designed to be left on the board. If desired, flux residues can be removed with ALPHA 2100 saponifier and aqueous cleaning equipment.

#### TECHNICAL DATA

Item	Typical Values	Item	Typical Values
Appearance	Clear, Colorless to Pale Yellow Liquid	Flash Point (T.C.C.)	12.22 °C
Solids Content, wt/wt	1.4%	Recommended Thinner	ALPHA 425
Specific Gravity @ 25 °C (77 °F)	0.795 ± 0.005	Shelf Life (from Date of Mfg.)	540 days
Acid Number (mg KOH/g)	10.4 ± 1.0	IPC J-STD-004 Designation	

#### CORROSION & ELECTRICAL RESISTANCE

##### CORROSION TEST

Test	Test Method	Results
Silver Chromate Paper	IPC-TM-650 2.3.33	PASS
Copper Mirror Test	IPC-TM-650 2.6.15	PASS
Copper Corrosion Test	IPC-TM-650 2.3.32	PASS

**SURFACE INSULATION RESISTANCE (all values in ohms)**

Test	Requirement	Result
Comb Up	$> 1.0 \times 10^8$	$4.9 \times 10^9$
Comb Down	$> 1.0 \times 10^8$	$2.3 \times 10^9$
Test Condition (per IPC-TM-650 2.6.3.3): 85 °C / 85%RH / 7 days		

**ELECTROMIGRATION (all values in ohms)**

Test	SIR (Initial)	SIR (Final)	Requirement	Result
Comb-Up	$7.9 \times 10^9 \Omega$	$1.4 \times 10^{10} \Omega$	SIR(Initial) /SIR(Final) <10	Pass
Comb-Down	$3.6 \times 10^9 \Omega$	$1.1 \times 10^{10} \Omega$	SIR(Initial) /SIR(Final) <10	Pass
Test Condition (per Bellcore TR-NWT-000078 Issue 3, Section 13.1.5): 65 °C/85% RH/500 Hours				

**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](http://MacdermidAlpha.com/assembly-solutions/knowledge-base).**

**STORAGE**

Store ALPHA FLS0016T-5 at 0 to 43 °C and prevent exposure to sunlight.

**CONTACT INFORMATION**

**To confirm this document is the most recent version, please contact  
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[www.macdermidalpha.com](http://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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