

ALPHA[®] LSC 332

Low Solids, No-Clean Flux

DESCRIPTION

ALPHA LSC 332 wave soldering flux, with low solid content, has been developed for precision soldering in the electronics industry without the necessity of cleaning after soldering. With the **ALPHA LSC 332** flux optimal soldering results are combined with a clean, dry surface of the printed circuit board. Contamination of test pins in in-circuit testing of freshly soldered printed circuit boards will therefore not occur. **ALPHA LSC 332** is halide-free, using a unique mixture of organic acids, including a small amount of modified rosin.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Solderable to copper surface
- Excellent wetting
- Barely visible residue left, even with foam application, thus providing cosmetic advantage without interference to pin testing
- Reduces the surface tension between solder mask and solder to significantly reduce the occurrence of solder balling defects

APPLICATION GUIDELINES

Operating Parameter	Recommendation
Flux application	Foam, Spray
Amount of Flux Applied	Foam: 1,000 to 2,000 µg/in ² of solids Spray: 600 to 1,200 µg/in ² of solids
Foam Fluxing	
Foam Stone Pore Size	20 to 50 µm
Distance that Top of Stone is Submerged Below Flux	1 to 1 ½ inches (25 to 40 mm)
Foam Fluxer Chimney Opening	3/8 to ½ inch (10 to 13 mm)
Foam Fluxing Using Air Knife	
Air Knife Hole Diameter	1 to 1.5 mm

Operating Parameter	Recommendation
Distance Between Holes	4 to 5 mm
Distance from Fluxer to Air Knife	4 to 6 inches (10 to 15 cm)
Air Knife Angle Back toward Fluxed from perpendicular	3 to 5°
Top-Side Preheat Temperature	85 to 110 °C
Bottom side Preheat Temperature	110 to 130 °C
Maximum Ramp Rate of Topside Temperature (to avoid component damage)	2 °C/sec (3.5 °F/sec) maximum
Conveyor Speed	1.0 to 1.8 m/min (Typically 1.4 m/min)
Contact Angle	5 to 8° (6° most common)
Contact Time	1.5 to 3.5 s (2 to 2 ½ s most common)
Solder Pot Temperature	235 to 260 °C (460 to 500 °F)
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: Flux applicators require the addition of flux thinner to replace evaporative losses and maintain the balance in flux composition. Due to the low solids content of this flux, specific gravity is not a very accurate measure for assessing the solids content. Monitoring and controlling the acid number is recommended for maintaining the flux composition. The acid number should be controlled between 17 to 19 mg KOH/gm. Titration can be done using Alpha Titration Kit #3.

TECHNICAL DATA

Item	Typical Values	Item	Typical Values
Appearance	Clear pale yellow liquid	Flash Point (T.C.C.)	17 °C
Solids Content, wt/wt	4.5	Shelf Life (from Date of Mfg.)	360 days
Specific Gravity @ 25 °C (77 °F)	0.802 ± 0.004	IPC J-STD-004 Designation	ROLO
Acid Number (mg KOH/g)	18		

CORROSION & ELECTRICAL TESTING
Corrosion Test

Test	Requirement	Results
Silver Chromate Paper Test	No Detection of Halide	PASS
Copper Mirror Test	No Complete Removal of Copper	PASS
IPC Copper Corrosion Test	No Evidence of Corrosion	PASS

Surface Insulation Resistance (all values in ohms)

Test	Requirement	Results
IPC J-STD-004 Comb-Down – Uncleaned	$> 1.0 \times 10^8$	2.5×10^8
IPC-J-STD-004 Comb-Up – Uncleaned	$> 1.0 \times 10^8$	5.0×10^9
IPC J-STD-004 Control Board	$> 1.0 \times 10^9$	2.2×10^{10}
IPC Test Condition (per J-STD-004): 85 °C/85%RH/ 7 days/-50V, measurement @ 100V/IPC B-24 board (0.4mm lines, 0.5mm 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**

<p>North America 109 Corporate Blvd. South Plainfield, NJ 07080, USA 1.800.367.5460</p>	<p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400</p>	<p>Asia 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100</p>
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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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