

ALPHA[®] SMX-023

Rosin-Based Middle Active, Dulling Flux

DESCRIPTION

ALPHA SMX-023 is a rosin-based, middle active and dulling flux designed for parts mounting on electronics where high reliability is required.

ALPHA SMX-023 is suitable for lead-free soldering. It is optimally formulated for SMT assemblies by reducing non-wetting and the occurrence of bridge. This flux exhibits sufficient insulating property owing that the flux residues are non-corrosive and non-hygroscopic.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Wide process window for superior performance in both lead-free and tin-lead alloys
- Excellent flux activity for defect-free soldering
- High level of bridging and icicle resistance
- Superior long-term electrical reliability
- Evenly spread, uniform, non-tacky, clear residue on solder mask
- Dulling flux for reduced glare on solder joints during visual inspection
- Can be applied via spraying or foaming

APPLICATION GUIDELINES

Preparation: In order to maintain consistent soldering performance and electrical reliability, it is important to begin the process with circuit boards and components that meet established requirements for solderability and ionic cleanliness. It is suggested that assemblers establish specifications on these items with their suppliers and that suppliers provide Certificates of Analysis with shipments and/or assemblers perform incoming inspection. A common specification for the ionic cleanliness of incoming boards and components is 5µg/in² maximum, as measured by an ionic contamination tester with heated solution.

Care should be taken in handling the circuit boards throughout the process. Boards should always be held at the edges. The use of clean, lint-free gloves is also recommended.

Conveyors, fingers and pallets should be cleaned. ALPHA SM-110 Solvent Cleaner has been found to be very useful for these cleaning applications.

Flux Application: ALPHA SMX-023 can be applied by spraying or foaming. When spray fluxing, the uniformity of the coating can be visually checked by running a piece of cardboard over the spray fluxer or by processing a board-sized piece of tempered glass through the spray and then through the preheat section.

Flux Solids Control: The solids content of ALPHA SMX-023 should be maintained by the addition of thinner to compensate for evaporation losses. Only ALPHA 425 Thinner should be used for this purpose, to ensure consistency of flux foaming and soldering characteristics. Flux solids content is readily controlled by simple hydrometer measurement. After emptying the flux, the reservoir should be thoroughly cleaned with IPA.

Residue Removal: ALPHA SMX-023 is a no-clean flux and the residues are designed to be left on the board. If flux residue removal is required, it can be cleaned with saponifier cleaner (for example ALPHA 2110) or commercial solvent cleaners.

TECHNICAL DATA

Parameters	Typical Values	Parameters	Typical Values
Appearance	Clear, pale yellow	Recommended Thinner	ALPHA 425
Specific Gravity @ 25 °C (77 °F)	0.820 +/- 0.005	Shelf Life (from Date of Mfg.)	360 days
Acid Number (mg KOH/g)	25.4 +/- 5.0	Container Size Availability	1, 5, and 55 Gal.
Solids Content, %, wt/wt	14	IPC J-STD-004 Designation	ROL0
Flash Point (T.C.C.)	14 °C		

CORROSION & ELECTRICAL TESTING
Corrosion Testing

Test	Requirement for ROL0	Results
Silver Chromate Paper IPC-TM 650 Test Method 2.3.33	No detection of halide	PASS
Copper Mirror Tests (JIS Z 3197:1999 8.4.2)	No evidence of mirror breakthrough	PASS
Copper Corrosion Test (JIS Z 3197:1999 8.4.1)	No evidence of corrosion	PASS

JIS Standard Electrochemical Migration

Test	Initial	1000 Hrs
Control	$4.61 \times 10^{10} \Omega$	$3.98 \times 10^{10} \Omega$
SMX-023	$2.86 \times 10^{10} \Omega$	$3.26 \times 10^{10} \Omega$
All Measurements @ 100V 85 °C, 85% RH, JIS Boards (0.32mm lines, 0.32 mm spacing, same as IPC B25 Boards)		

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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