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MacDermid Alpha ELECTRONICS SOLUTIONS

TECHNICAL DATA SHEET

KESTER® 958 SOLDERING FLUX

Low-Solids, No-Clean Liquid Flux

DESCRIPTION

Kester 958 Soldering Flux is a no-clean, non-corrosive, zero-halogen liquid flux that is specifically designed for the wave soldering of conventional and surface mount circuit board assemblies. 958 was developed to give excellent soldering performance on bare copper printed circuit boards treated with OSP coatings. Essentially, no residue remains after soldering. Boards are dry and cosmetically clean as they exit the wave solder machine, thus posing no interference with electrical testing. 958 has excellent compatibility with most conformal coating products on the market today. This comprehensive formulation possesses improved wetting characteristics and also exhibits superior corrosion inhibiting properties and provides a non-tacky residue. A major advantage of this flux is the reduced odor associated with the soldering process.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Excellent for bare copper circuit board technology
- Compatible with conformal coat processes
- Improves soldering performance
- Reduced odor associated with soldering process
- Eliminates the need and expense of cleaning
- Non-corrosive tack-free residues
- Classified as ORL0 per J-STD-004
- Compliant to Bellcore GR-7

ROHS COMPLIANCE

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2015/863 for the stated banned substances.

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TECHNICAL DATA

Category	Results	Procedure/Remarks
Physical Properties		
Specific Gravity	0.806 ± 0.005	Anton Paar DMA 35 @ 25 °C
Percent Solids (typical)	2.7	Tested to J-STD-004, IPC-TM-650, Method 2.3.34
Acid Number	23.2 ± 1.0 mg KOH/g of flux	Tested to J-STD-004, IPC-TM-650, Method 2.3.13
pH (10% solution)	3.1	Hanna Instruments 8314 @ 25 °C
Reliability Properties		
Copper Mirror Corrosion	Low	Tested to J-STD-004, IPC-TM-650, Method 2.3.32
Corrosion Test	Low	Tested to J-STD-004, IPC-TM-650, Method 2.6.15
Silver Chromate	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.3.33
Chloride and Bromides	None Detected	Tested to J-STD-004, IPC-TM-650, Method 2.3.35
Fluorides by Spot Test	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1
Surface Insulation Resistivity (SIR), IPC (Typical)	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	958 PD	958 PU
Day 1	$5.0*10^9$ Ω	$3.1*10^9$ Ω	$5.2*10^9$ Ω
Day 4	$5.8*10^9$ Ω	$4.9*10^9$ Ω	$6.8*10^9$ Ω
Day 7	$6.3*10^9$ Ω	$5.5*10^9$ Ω	$7.2*10^9$ Ω

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FLUX APPLICATION

958 can be applied to circuit boards by a spray, foam or dip process. Flux deposition should be 120 to 240 µg of solids/cm^2 (750 to 1500 µg of solids/in^2). An air knife after the flux tank is recommended to remove excess flux from the circuit board and prevent dripping on the preheater surface for the Foam and Dip process.

PROCESSING GUIDELINES

The optimum preheat temperature for most circuit assemblies is 90 to 105 °C (194 to 221 °F) as measured on the top or component side of the printed circuit board. Dwell time in the wave is typically 2 to 4 seconds for leaded alloys and 4 to 8 seconds for lead-free alloys. The conveyor speed should be adjusted to accomplish proper board contact time with the solder. Then the preheat temperatures are adjusted to achieve the required preheat top board temperatures. In the event you need further direction on the setup of your wave soldering system, please contact MacDermid Alpha Technical Support.

Flux Control

Acid number is normally the most reliable method to control the flux concentration of low solids, no clean fluxes. To check concentration, a simple acid-base titration should be used. PS-22 Test Kit and procedure are available from MacDermid Alpha.

Control of the flux in the foam flux tank during use is necessary for assurance of consistent flux distribution on the circuit boards. The complex nature of the solvent system for the flux makes it imperative that Kester 4662 Thinner be used to replace evaporative losses. When excessive debris from circuit boards, such as board fibers and from the airline build up in the flux tank, these particulates will redeposit on the circuit boards which may create a buildup of residues on probe test pins. It is, therefore, necessary to clean the tank and then replenish it with fresh flux when excessive debris accumulates in the flux tank.

Cleaning

958 flux residues are non-conductive, non-corrosive and do not require removal in most applications. If residue removal is required, call MacDermid AlphaTechnical Support.

Storage, Handling and Shelf Life

958 is flammable. Store away from sources of ignition. Shelf life is 3 years from date of manufacture when handled properly and held at 10 to 25 °C (50 to 77 °F).

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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.



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.**

CONTACT INFORMATION

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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