KESTER® 984 SOLDERING FLUX

Low-Solids, No-Clean Liquid Flux

DESCRIPTION

Kester 984 Soldering Flux is a low-solids, alcohol-based, no-clean chemistry developed for soldering electronic circuit board assemblies and does not require any nitrogen in the wave soldering process. The residue left behind is minimal and non-tacky so that boards are cosmetically clean as they exit the wave solder machine. The minimal amount of residue remaining after soldering is non-conductive and non-corrosive, hence it is possible for the residue to be left on the boards without degrading the reliability of the assembly. 984 is classified as Type ORL0 flux under J-STD-004 specifications.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Excellent cosmetic appearance
- Non-corrosive, non-conductive and tack-free residues
- No surface insulation degradation
- Eliminates the needs and expense of cleaning
- Minimizes micro-solder balling at connectors and CPU and bridging by providing a clean snap-off during wave soldering
- Bright, shiny solder connections
- Provides good solderability on surface mount circuit boards under air wave soldering
- Classified as ORL0 per J-STD-004
- Compliant to Bellcore GR-78-CORE

ROHS COMPLIANCE

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

TECHNICAL DATA

Category	Results	Procedure/Remarks
Physical Properties		
Specific Gravity	0.792 ± 0.005	Anton Paar DMA 35 @ 25 °C
Percent Solids (theoretical)	2.2	Tested by potentiometric titration
Acid Number (typical)	15.5 mg KOH/g of flux	Tested by potentiometric titration
Thinner	Kester 4662	
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
Fluorides by Spot Test	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1
Electromigration, Bellcore (typical)	Pass	Tested to Bellcore GR-78-CORE

	984 PD	984 PU
Day 4	$3.3*10^{11}$ Ω	$6.0*10^{10}$ Ω
Day 21	$1.0*10^{13}$ Ω	$3.0*10^{12}$ Ω

Surface Insulation Resistivity (SIR), IPC (Typical)	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	984 PD	984 PU
Day 1	$6.1*10^{9}$ Ω	$1.8*10^{9}$ Ω	$2.6*10^{9}$ Ω
Day 4	$2.1*10^{9}$ Ω	$3.1*10^{9}$ Ω	$2.8*10^{9}$ Ω
Day 7	$1.6*10^{9}$ Ω	$2.0*10^{9}$ Ω	$2.3*10^{9}$ Ω

Surface Insulation Resistivity (SIR), Bellcore (typical)	Pass	Tested to Bellcore GR-78-CORE

	Blank	984 PD	984 PU
Day 1	$4.5*10^{13}$ Ω	$3.7*10^{13}$ Ω	$2.3*10^{13}$ Ω
Day 4	$3.0*10^{13}$ Ω	$5.1*10^{13}$ Ω	$5.9*10^{13}$ Ω

FLUX APPLICATION

984 is specifically designed for spray fluxing. Flux deposition should be 48 to 80 µg of solids/cm^2 (300 to 500 µg of solids/in^2). The flux should always be evenly deposited on the surface of the solder side of the board. It shall not be dripping off the board after it has been sprayed on.

PROCESSING GUIDELINES

The optimum preheating temperature for most circuit assemblies is 80 to 100 °C (176 to 212 °F), as measured on the top or component side of the assembly. Dwell time in the wave is typically 2 to 4 seconds for leaded solder and 4 to 8 seconds for lead-free alloys.

The optimum preheat temperature for most circuit assemblies is 80 to 100 °C (176 to 212 °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 4-8 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.

Cleaning

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

Storage, Handling and Shelf Life

984 is flammable. Store away from sources of ignition. Shelf life is 1 year from date of manufacture when handled properly and held at 10 to 25 °C (50 to 77 °F).

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