

984 Soldering Flux

Low-Solids, No-Clean Liquid Flux

Product 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.

Performance Characteristics:

- 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.

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	$3.3 \times 10^{11} \Omega$	$6.0 \times 10^{10} \Omega$
Day 21	$1.0 \times 10^{13} \Omega$	$3.0 \times 10^{12} \Omega$

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	$6.1 \times 10^9 \Omega$	$1.8 \times 10^9 \Omega$	$2.6 \times 10^9 \Omega$
Day 4	$2.1 \times 10^9 \Omega$	$3.1 \times 10^9 \Omega$	$2.8 \times 10^9 \Omega$
Day 7	$1.6 \times 10^9 \Omega$	$2.0 \times 10^9 \Omega$	$2.3 \times 10^9 \Omega$

Surface Insulation Resistivity (SIR), Bellcore (typical): Pass

Tested to Bellcore GR-78-CORE

	Blank	984 PD	984 PU
Day 1	$4.5 \times 10^{13} \Omega$	$3.7 \times 10^{13} \Omega$	$2.3 \times 10^{13} \Omega$
Day 4	$3.0 \times 10^{13} \Omega$	$5.1 \times 10^{13} \Omega$	$5.9 \times 10^{13} \Omega$

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.

Process Considerations

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 Kester 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 Kester Technical Support.

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](#).



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).

Health and Safety

This product, during handling or use, may be hazardous to your health or the environment. Read the Safety Data Sheet and warning label before using this product. Safety Data Sheets are available at this [link](#).

Contact Information

To confirm this document is the most recent version, please contact Assembly@MacDermidAlpha.com

<p>North America 109 Corporate Blvd. South Plainfield, NJ 07080, USA 1.800.253.7837</p>	<p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400</p>	<p>Asia Pacific 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100</p>
--	--	---

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

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. No statement or recommendation shall constitute a representation unless set forth in an agreement signed by officers of seller and manufacturer. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY IS MADE. The following warranty is made in lieu of such warranties and all other warranties, express, implied, or statutory. Products are warranted to be free from defects in material and workmanship at the time sold. The sole obligation of seller and manufacturer under this warranty shall be to replace any noncompliant product at the time sold. Under no circumstances shall manufacturer or seller be liable for any loss, damage or expense, direct, indirect, incidental or consequential, arising out of the inability to use the product. Notwithstanding the foregoing, if products are supplied in response to a customer request that specifies operating parameters beyond those stated above, or if products are used under conditions exceeding said parameters, the customer by acceptance or use thereof assumes all risk of product failure and of all direct, indirect, incidental and consequential damages that may result from use of the products under such conditions, and agrees to exonerate, indemnify, defend and hold harmless MacDermid, Incorporated and its affiliates therefrom. No suggestion for product use nor anything contained herein shall be construed as a recommendation to use any product in a manner that infringes any patent or other intellectual property rights, and seller and manufacturer assume no responsibility or liability for any such infringement.

© 2019 MacDermid, Inc. and its group of companies. All rights reserved. "R" and "TM" are registered trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.