

KESTER® 186-18 SOLDERING FLUX

Mildly Activated Rosin Liquid Flux

DESCRIPTION

Kester 186-18 Soldering Flux, under MIL-F-14256, was QPL approved as Type RMA. Although the fluxing ability approaches that of Type RA flux, the flux residue after soldering is non-corrosive and non-conductive. 186-18 rosin flux has been developed for use in critical applications where difficult assemblies are to be soldered, but process requirements stipulate use of Type RMA flux. This flux possesses high thermal stability for soldering multi-layer assemblies which require a high preheat temperature. Exposure to high preheat temperatures does not degrade solubility of the residue in normal cleaning solvents. There is no surface insulation resistance degradation caused by the flux residue. The use of a minimum of ionic activating agents and the inactive nature of the residue permits leaving the residue on circuit board assemblies for many applications. The flux residue is also moisture and fungus resistant.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- High thermal stability
- Improves soldering performance
- Eliminates the need and expense of cleaning
- Classified as ROL0 under IPC J-STD-004 and ROL1 under IPC J-STD-004B

ROHS COMPLIANCE

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive.

TECHNICAL DATA

Category	Results	Procedure/Remarks
Physical Properties		
Specific Gravity	0.831	@ 25 °C (Typical)
Flash Point	18 °C (64 °F)	
Percent Solids (Typical)	18%	

Category	Results	Procedure/Remarks
Reliability Properties		
Copper Mirror Corrosion	Low	IPC-TM-650, Method 2.3.32
Corrosion Test	Low	IPC-TM-650, Method 2.6.15
Silver Chromate	Pass	IPC-TM-650, Method 2.3.33
Surface Insulation Resistance (SIR) IPC	Pass	IPC-TM-650, Method 2.6.3.7
Surface Insulation Resistance (SIR) IPC (Typical)	Pass	IPC-TM-650, Method 2.6.3.3

FLUX APPLICATION

186-18 can be applied to circuit boards by a foam or dip process. An air knife after the flux tank is recommended to remove excess flux from the circuit board and prevent dripping on the preheated surface.

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. The wave soldering speed should be adjusted to accomplish proper preheating and evaporate excess solvent, which could cause spattering. For best results, speeds of 1.1 to 1.8 m/min (3½ to 6 ft/min) are used. The surface tension has been adjusted to help the flux form a thin film on the board surface allowing rapid solvent evaporation.

Flux Control

Specific gravity is normally the most reliable method to control the flux concentration of rosin-based fluxes. To check concentration, a hydrometer should be used. 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 120 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

186-18 residues are non-conductive, non-corrosive and do not require removal in most applications. If residue removal is required, it can be removed using commercially available flux residue cleaner. Contact MacDermid Alpha Technical Support for additional assistance.

Storage, Handling and Shelf Life

186-18 is flammable. Store away from sources of ignition. Shelf life is 2 years from the 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

North America 140 Centennial Avenue Piscataway, NJ 08854 1.800.367.5460	Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400	Asia 8/F., Two Sky Parc 51 Hung To Road Kwun Tong, Kowloon, Hong Kong, SAR China 852.2500.5365
---	---	--

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 or trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.