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TECHNICAL DATA SHEET

186 Soldering Flux

Mildly Activated Rosin Liquid Flux

Product Description

Kester 186 Soldering Flux, under MIL-F-14256, was QPL approved as Type RMA. The flux residue after soldering is non-corrosive and non-conductive. 186 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 may require a high preheat temperature or longer temperature dwell time. 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.

Performance Characteristics:

- High thermal stability
- Improves soldering performance
- Eliminates the need and expense of cleaning
- Classified as ROL1 per J-STD-004, J-STD-004A & J-STD-004B

RoHS Compliance

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive. Additional RoHS information is located at https://www.kester.com/downloads/environmental.

Physical Properties

Specific Gravity: 0.879
Anton Paar DMA @ 25 °C

Flash Point: 18 °C (64 °F)

Percent Solids (typical): 36%
IPC-TM-650, Method 2.3.34

Acid Number (typical): 55 mg KOH/g flux
IPC-TM-650, Method 2.3.13

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Reliability Properties

Copper Mirror Corrosion: Low
IPC-TM-650, Method 2.3.32

Corrosion Test: Low
IPC-TM-650, Method 2.6.15

Electrochemical Migration (ECM): Pass
IPC-TM-650 Method 2.6.14.1 [65 °C, 85% RH, 100V, 21days]

Surface Insulation Resistivity (SIR): Pass
IPC-TM-650, Method 2.6.3.7

Surface Insulation Resistivity (SIR): Pass
IPC-TM-650, Method 2.6.3.3

Flux Application

186 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. A spray application can be used if the spray system can handle a high solids flux (36%).

Process Considerations

The wave conveyor speed should be adjusted to achieve the contact time. Dwell time for Sn63Pb37 is typically 2 to 4 seconds. Contact time fort lead-free alloys are typically 4 to 8 seconds. Adjust the preheat settings to achieve the proper preheat temperature. 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. This will be the same for all alloys.

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Flux Control

Specific gravity (0.879 ± 0.005 Anton Paar DMA @ 25 °C) 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 or Kester 4662 Thinner be used to replace evaporative losses. When excessive debris from circuit boards, such as board fibers and debris from the air line, build up in the flux tank, this debris and particulates will redeposit on the circuit boards which may create a buildup of residues on probe test pins. Therefore, it is necessary to clean the tank and then replenish it with fresh flux when excessive debris accumulates in the flux tank.

Cleaning

186 residues are non-conductive, non-corrosive and do not require removal in most applications. If residue removal is required, contact 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

186 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).

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.

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TECHNICAL DATA SHEET

Contact Information

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