186-18 Soldering Flux

Mildly Activated Rosin Liquid Flux

Product 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.

Performance Characteristics:

- 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. Additional RoHS information is located at https://www.kester.com/downloads/environmental.

Physical Properties

Specific Gravity @ 25 °C: 0.831 (typical)

Flash Point: 18 °C (64 °F)

Percent Solids (typical): 18%

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

Surface Insulation Resistivity (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.

Process Considerations

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 Kester Technical Support for additional assistance.

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

186-18 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).

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

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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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