920-CXF Soldering Flux

Low-Solids, No-Clean Liquid Flux

Product Description

Kester 920-CXF Soldering Flux is a low solids no-clean flux designed for wave soldering conventional and surface mount circuit board assemblies. This flux eliminates defects often experienced in surface mount assembly wave soldering operations with traditional fluxes. This non-corrosive and non-conductive flux has an extremely low solids content. There is essentially no residue left on the assembly after soldering. There are no residues to interfere with electrical testing and the expense of cleaning is eliminated. PCB assemblies are dry as they exit the wave solder machine. The surface insulation resistance is higher than that provided by typical organic water soluble fluxes. Electrical reliability of the assembly is assured. This flux formulation is suitable for soldering bare copper and solder plated circuit boards. It is advised that bare copper boards be free of excessive oxides and other contamination for optimum soldering performance.

Performance Characteristics:

- Essentially no residue left behind after soldering
- Eliminates expense of cleaning
- Boards are dry as they exit the wave solder machine
- Non-corrosive and halogen-free
- No surface insulation resistance degradation
- No offensive odors given off during soldering
- Classified as ORL0 per J-STD-004

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: 0.802 ± 0.003
Anton Paar DMA 35 @ 25 °C

Percent Solids (theoretical): 4.5

Acid Number (typical): 21.0 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

Chloride and Bromides: None Detected
Tested to J-STD-004, IPC-TM-650, Method 2.3.35

Fluorides by Spot Test: Pass
Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1

Surface Insulation Resistivity (SIR), IPC (typical): Pass
Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3
Test Conditions: 85 °C, 85% RH

	Blank	920-CXF PD	920-CXF PU
Day 1	$9.68*10^9$ Ω	$8.92*10^9$ Ω	$5.47*10^9$ Ω
Day 4	$6.52*10^9$ Ω	$6.50*10^9$ Ω	$4.96*10^9$ Ω
Day 7	$7.12*10^9$ Ω	$7.54*10^9$ Ω	$6.55*10^9$ Ω

Flux Application

920-CXF can be applied to circuit boards by a spray, foam or dip process. Flux deposition should be 120 to 240 µg of solids/ cm^2 (750 to 1500 µg of solids/in^2). An air knife after the flux tank is recommended for the foam and dip application to remove excess flux from the circuit board and prevent dripping on the preheated surface when the foam or dip process is used.

Process Considerations

The optimum preheat temperature for most circuit assemblies is 82 to 110 °C (180 to 230 °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 to 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.

Flux Control

Acid number is normally the most reliable method to control the flux concentration of low solids, no-clean fluxes. To check concentration, a simple acid-base titration should be used. Kester PS-22 Test Kit and procedure are available from Kester. The complex nature of the solvent system for the flux makes it imperative that Kester 4662 Thinner be used to replace evaporative losses. When excessive debris and contaminants accumulate in the flux tank over time, this may affect the soldering performance of the flux. Hence it is necessary to clean the tank and then replenish it with fresh flux or dispose the spent flux when applicable. During flux change, it is recommended to clean the reservoir applicator with isopropanol solvent.

Cleaning

Kester 920-CXF 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

920-CXF 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

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

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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