

Kester 952S

Low Solid – No Clean

Product Description

Kester 952S is a halogen-free, non rosin organic flux designed for wave soldering conventional and surface mount circuit board assemblies. The extremely low solid content (2%) and nature of activator system results in practically NO RESIDUES left on the assembly after soldering. Boards are dry and cosmetically clean as they exit the wave solder machine. There are no residues to interfere with electrical testing and the expense of cleaning is eliminated.

Kester 952S exhibits improved soldering performance to minimize soldering bridges (shorts) and excessive solder defects. This non-corrosive and non conductive flux meets the strictest requirements of Bellcore TR-TSY-000078 specification. This flux is suitable for automotive, computer, telecommunications and photo-voltaic applications where reliability considerations are critical. The surface insulation resistance on soldered boards is higher than that provided by typical organic water-soluble fluxes.

Performance Characteristics

- Non-corrosive, halogen/halide free
- No surface insulation resistance degradation
- Visually clean, non-tacky residues
- Bellcore/Telecordia compliant
- Classified ORL0 per J-STD-004

Physical Properties

Specific Gravity (typical): 0.803g/cm³

Anton Paar DMA 35 @ 25C

Percent Solids (theoretical): 2.0

Acid Number (typical): 15.5 mg KOH/g

Tested by potentiometric titration

Thinner: Kester 108-S

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

Chlorides & 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

SIR, IPC (typical): Pass

Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

SIR, Bellcore (typical): Pass

Tested to Bellcore GR-78-CORE

Application Notes

Flux Application:

Kester 952S is specially designed for spray or dip fluxing. Flux deposition should be 50-150µg of solids per cm². An air knife after the flux tank is recommended to remove excess flux from the circuit board and prevent flux dripping on the pre-heater surface.

Process Considerations:

The optimum preheat temperature for most circuit assemblies is 85-105°C, as measured on the top or component side of the assembly. The optimum preheat temperature for most circuit assemblies is 105-145°C, as measured at the bottom or component side of the assembly. It is still important to note that the optimum preheat temperature for a given assembly will depend on the circuit board design, board thickness, length of contact time with the molten solder, solder wave shape, speed of solder flow and preheating time.

For Photovoltaic applications, the preheat is often warmer, approximately 150°C, though for a much shorter period of time. The soldering can then be performed using hot bar, infra-red, conduction or other methods of heat transfer.

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. PS-20 Test Kit and procedure are available from Kester. The complex nature of the solvent system for the flux makes it imperative that Kester 108S Thinner be used to replace evaporative losses. When excessive debris from circuit boards and environmental dust build up in the flux tank, these particulates will clog the spray nozzle and redeposit onto the circuit board. It is therefore necessary to clean the tank and then replenish it with fresh flux when excessive debris accumulates in the tank.

Cleaning:

Kester 952S residues are non-conductive, non-corrosive and do not require removal in most applications. If residue removal is required, call Kester Technical Support.

Storage, Handling and Shelf Life:

Kester 952S is flammable. Store away from sources of ignition. Shelf life is 1 year from date of manufacture when handled properly and held at 10-25°C.

Health and Safety:

This product, during handling or use, may be hazardous to health or the environment. Read the Material Safety Data Sheet and warning label before using this product.

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