



## 958 Soldering Flux

### Low-Solids No-Clean Liquid Flux

### Product Description

Kester 958 Soldering Flux is a no-clean, non-corrosive, halogen-free liquid flux that is specifically designed for the wave soldering of conventional and surface mount circuit board assemblies. 958 was developed to give excellent soldering performance on bare copper printed circuit boards treated with OSP coatings. Essentially, no residue remains after soldering. Boards are dry and cosmetically clean as they exit the wave solder machine, thus posing no interference with electrical testing. 958 has excellent compatibility with most conformal coating products on the market today. This comprehensive formulation possesses improved wetting characteristics and also exhibits superior corrosion inhibiting properties and provides a non-tacky residue. A major advantage of this flux is the reduced odor associated with the soldering process.

#### Performance Characteristics:

- Excellent for bare copper circuit board technology
- Compatible with conformal coat processes
- Improves soldering performance
- Reduced odor associated with soldering process
- Eliminates the need and expense of cleaning
- Non-corrosive tack-free residues
- Classified as ORL0 per J-STD-004
- Compliant to Bellcore GR-7

### 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:** 0.806 ± 0.005  
Anton Paar DMA 35 @ 25°C

**Acid Number:** 23.2 ± 1.0 mg KOH/g of flux  
Tested to J-STD-004, IPC-TM-650, Method 2.3.13

**pH (10% solution):** 3.1  
Hanna Instruments 8314 @ 25°C

**Percent Solids (typical):** 2.7  
Tested to J-STD-004, IPC-TM-650, Method 2.3.34

**Flash Point:** 18°C (64°F)

### Reliability Properties

**Copper Mirror Corrosion:** Low  
Tested to J-STD-004, IPC-TM-650, Method 2.3.32

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

**Corrosion Test:** Low  
Tested to J-STD-004, IPC-TM-650, Method 2.6.15

**SIR, IPC (typical):** Pass  
Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

**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

	Blank	958 PD	958 PU
Day 1	5.0*10 <sup>9</sup> Ω	3.1*10 <sup>9</sup> Ω	5.2*10 <sup>9</sup> Ω
Day 4	5.8*10 <sup>9</sup> Ω	4.9*10 <sup>9</sup> Ω	6.8*10 <sup>9</sup> Ω
Day 7	6.3*10 <sup>9</sup> Ω	5.5*10 <sup>9</sup> Ω	7.2*10 <sup>9</sup> Ω

## Flux Application

958 can be applied to circuit boards by a spray, foam or dip process. Flux deposition should be 120-240  $\mu\text{g}$  of solids/cm<sup>2</sup> (750-1500  $\mu\text{g}$  of solids/in<sup>2</sup>). An air knife after the flux tank is recommended to remove excess flux from the circuit board and prevent dripping on the preheater surface for the Foam and Dip process.

## Process Considerations

The optimum preheat temperature for most circuit assemblies is 90-105°C (194-221°F) as measured on the top or component side of the printed circuit board. Dwell time in the wave is typically 2-4 seconds for leaded alloys and 4-8 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. PS-20 Test Kit and procedure are available from Kester. 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 4662 Thinner be used to replace evaporative losses. When excessive debris from circuit boards, such as board fibers and from the air line build up in the flux tank, these particulates will redeposit on the circuit boards which may create a build up 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

958 flux 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

958 is flammable. Store away from sources of ignition. Shelf life is 3 years from date of manufacture when handled properly and held at 10-25°C (50-77°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.