

# 2331-ZX

## Organic Water-Soluble Liquid Flux

### Product Description

Kester 2331-ZX is an innovation in organic acid water-soluble flux chemistry for soldering circuit board assemblies. This unique, neutral pH chemistry flux provides the best ionic cleanliness of any organic water-soluble flux available to the electronics industry. This popular flux has been used for soldering critical assemblies in the computer, telecommunications and other industries. No offensive odors will be emitted during soldering. Kester 2331-ZX will not create excessive foaming in standard water cleaning systems. Kester 2331-ZX has good soldering properties for improved productivity without sacrificing reliability of the assembly. This flux does not attack properly cured solder masks or FR-4 epoxy-glass laminate. Kester 2331-ZX is not detrimental to the surface insulation resistance of the soldered assembly. Use of this flux minimizes cleaning costs while complying with environmental regulations.

#### Performance Characteristics:

- High activity
- Minimizes iciling and bridging
- Chemically compatible with most solder masks and board laminates
- pH Neutral Chemistry
- Classified as ORH1 per J-STD-004

### RoHS Compliance

This product meets the requirements of the RoHS (Restriction of Hazardous Substances) Directive, 2002/95/EC Article 4 for the stated banned substances.

### Physical Properties

**Specific Gravity:** 0.899 ± 0.005

Antoine Paar DMA 35 @ 25°C

**Percent Solids (typical):** 33

Tested to J-STD-004, IPC-TM-650, Method 2.3.34

**Flash Point:** 16°C (60°F)

### Reliability Properties

**Copper Mirror Corrosion:** High

Tested to J-STD-004, IPC-TM-650, Method 2.3.32

**Corrosion Test:** High

Tested to J-STD-004, IPC-TM-650, Method 2.6.15

**Silver Chromate:** Fail

Tested to J-STD-004, IPC-TM-650, Method 2.3.33

**Chloride and Bromides:** 2.2%

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

	<u>Blank</u>	<u>2331-ZX</u>
Day 1	1.2 × 10 <sup>10</sup> Ω	3.4 × 10 <sup>8</sup> Ω
Day 4	8.7 × 10 <sup>9</sup> Ω	1.4 × 10 <sup>9</sup> Ω
Day 7	8.6 × 10 <sup>9</sup> Ω	1.8 × 10 <sup>9</sup> Ω

## Application Notes

### Flux Application:

Kester 2331-ZX can be applied to circuit boards by a dip, foam or wave process. An air knife after the flux tank is recommended to remove excess flux from the circuit board and prevent dripping on the preheater surface.

### Process Considerations:

The optimum preheat temperature for most circuit assemblies is 82-88°C (180-190°F) as measured on the top or component side of the printed circuit board. Dwell time in the wave is typically 2-4 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 1.1-1.8 m/min (3½-6 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. 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 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:

No neutralizer, saponifiers or detergents are necessary in the water wash system for complete removal of flux residues. It is not recommended to use high mineral content tap water. Otherwise, tap, deionized or softened water may be used for cleaning. The optimum water temperature is 54-66°C (130-150°F), although lower temperatures may be sufficient.

### Storage and Shelf Life:

Kester 2331-ZX 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 (50-77°F).

### Health & 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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