



# NF372-TB Zero-Halogen, No-Clean Liquid Flux for High Temperature Applications



## Product Description

Kester NF372-TB is a zero-halogen, no-clean, low solids liquid flux designed to withstand long dwell times and high pre-heat temperatures needed in thick board assemblies. Sustained activity within the flux allows for good barrel fill in challenging applications, such as reflowed copper OSP boards or with difficult to solder components. NF372-TB residues are minimal, clear and non-tacky for improved cosmetics. NF372-TB is classified as ROL0 flux under IPC J-STD-004B.

### Performance Characteristics:

- Zero-halogen (none intentionally added)
- Provides good solderability on surface mount circuit boards under air atmosphere
- Non-corrosive, non-conductive and non-tacky residues
- Ability to provide desired hole-fill with preheat temperatures over 130°C
- Compliant to GR-78-CORE (Telcordia/Bellcore)
- Classified as ROL0 per J-STD-004B



## RoHS Compliance

Kester does not determine any applicable Restriction of Hazardous Substances (RoHS) exemptions for our lead containing products at the user level.



## Physical Properties

**Specific Gravity:** 0.793  
Anton Parr DMA @ 25°C

**Acid Number (typical):** 16.5 mg KOH/g flux  
Tested by potentiometric titration

**Thinner:** Kester 4662

**Percent Solids (theoretical):** 3.90%



## Reliability Properties

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

**Halogen Content:** None Detected  
Tested to J-STD-004-B, IPC-TM-650, Method 2.3.28.1

**Surface Insulation Resistivity (SIR):** Pass  
Tested to J-STD-004A, IPC-TM-650, Method 2.6.3.7

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

**Surface Insulation Resistivity (SIR):** Pass All Readings  $> 1.0 \times 10^8 \Omega$   
Tested to J-STD-004B, IPC-TM-650, Method 2.6.3.7

**Bellcore SIR, IPC:** Pass All Readings  $> 2.0 \times 10^{11} \Omega$   
Tested to GR-78 13.1.3

**Electro Chemical Migration (ECM):** Pass  
Tested to J-STD-004B, IPC-TM-650, Method 2.6.14.1

## Flux Application

NF372-TB is designed for spray fluxing. Flux deposition should be 90-190  $\mu\text{g}$  of solids/ $\text{cm}^2$  (600-1200  $\mu\text{g}$  of solids/ $\text{in}^2$ ). This flux is not designed for foam applications.

## Process Considerations

The optimum preheat temperature for most circuit assemblies is 110-145°C (230-293°F) in an air atmosphere, as measured on the top 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 molten solder, solder wave shape, speed of solder flow and preheating time.

Dwell time in the wave is typically 3-7 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 0.8-1.2 m/min (2.6-3.9 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. The solderpot temperature is recommended to be 245-260°C (473-500°F) for Sn63Pb37 alloy and about 260-270°C (500-518°F), for SnCu or SAC alloy. Above information is a guideline and it is advisable to note that the optimum settings for a given assembly may vary and this is dependent on the circuit board design, board thickness, components used and equipment used. A design of experiment is recommended to be done to optimize the soldering process.

## Flux Control

NF372-TB is designed to be sprayed or used in a Wave Flux system. The complex nature of the solvent system for the flux makes it imperative that Kester 4662 Thinner be used to replace evaporative losses. Incoming solderability inspection of circuit boards and components is advisable as a part of process control to maintain consistent soldering results.

## Cleaning

NF372-TB 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 NF372-B is flammable. Store away from sources of ignition. Shelf life is 1-year from the 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.