

## TSF-8808

### Lead-Free, Water-Soluble Tacky Soldering Flux

#### DESCRIPTION

Kester **TSF-8808** is a synthetic water soluble tacky soldering flux formula. **TSF-8808** has no intentionally added halogens. It is specifically formulated to meet the IEC 61249-2-21 definition for halide free materials. **TSF-8808** is designed to have low volatiles to reduce outgassing during reflow. This minimizes component movement and misalignment during reflow especially thin flip chip die. **TSF-8808** can be a drop in replacement for a variety of metallurgies; such as low melting point alloys (SnBi, etc.), typical tin-lead eutectic and the higher melting point alloys (SnAg, SnCu, SnAgCu, etc.). Post reflow the residues are completely soluble in water and do not require any cleaning additives. To reduce the cost of assembling, DI water can be used to remove **TSF-8808** residues.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

#### FEATURES & BENEFITS

- Residue removal by DI water
- Synthetic TSF for maximum lot-to-lot consistency
- Low volatiles
- Truly Halogen-Free (no intentionally added halogens)
- Leaves bright/shiny solder joints after reflow
- ANSI/J-STD-004B flux designator ORH0
- Can reflow in air or nitrogen environments

#### RoHS COMPLIANCE

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2015/863 for the stated banned substances.

#### PHYSICAL PROPERTIES

**Viscosity (typical):**

230 poise

Tested to J-STD-004B, IPC-TM-650, Method  
2.4.34.4**Acid Number: 52 - Typical**Tested to J-STD-004B, IPC-TM-650, Method  
2.3.13

**pH 10% Solution:** 4.1  
 Kester Method #1W-QC-G-15

**Tackiness (grams-force):** 70 Typical  
 Kester Method #1W-QC-3-04

**Quantitative Halogen:** None  
 BS EN14582 (Halogen Analysis) O2 Bomb

**Visual Appearance:** Pale White  
 Kester Method #1W-QC-G-18

**Quantitative Halides:** None  
 Tested to J-STD-004B, IPC TM-650 2.3.42

### 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

**Typical ECM, IPC:** Pass  
 Tested to J-STD-004B, IPC-TM-650, Method 2.6.14.1

	TSF-8808
96 hours	6.34*10 <sup>11</sup> Ω
500 hours	1.01*10 <sup>11</sup> Ω

**SIR, IPC (typical):** Pass  
 Tested to J-STD-004B, IPC-TM-650, Method 2.6.3.7

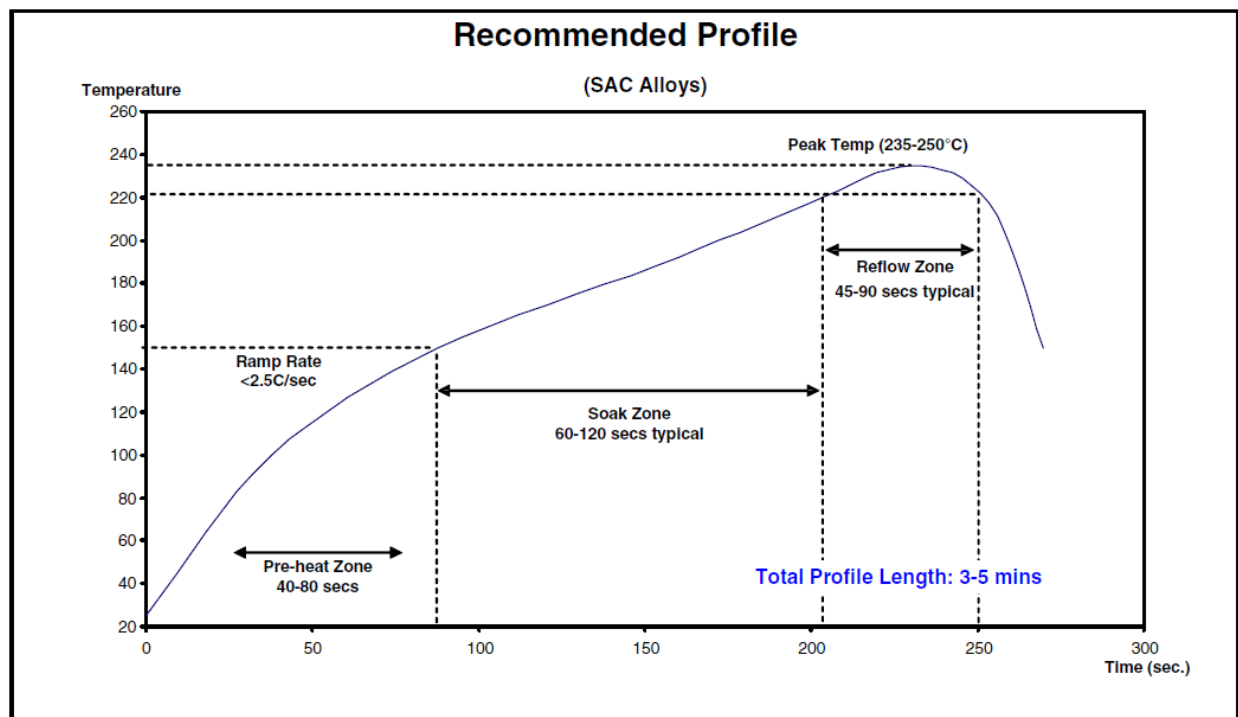
	Blank	TSF-8808
Day 1	1.12*10 <sup>10</sup> Ω	6.04*10 <sup>9</sup> Ω
Day 4	1.87*10 <sup>10</sup> Ω	8.49*10 <sup>9</sup> Ω
Day 7	1.72*10 <sup>10</sup> Ω	9.50*10 <sup>9</sup> Ω

### STANDARD APPLICATIONS

TSF-8808 Tacky solder flux formulations are designed for stencil/screen printing, pin transfer, dot dispensing and/or syringe applications. Tacky solder flux formulations can be used as a tack and flux vehicle for soldering components to a solid solder deposit (SSD), or precision pad technology (PPT) board surfaces. Great for rework applications on all PCB packages. Works on flip chip, chip scale package and flip chip bumping sites assemblies as a soldering flux.

**RECOMMENDED REFLOW PROFILE**

The recommended convection reflow profile for Sn96.5Ag3.5, Sn99.3Cu0.7, or the various SnAgCu alloys is shown here. This profile is simply a guideline. As TSF-8808 was engineered to be a versatile, robust interconnect material other reflow profiles will be effective. The optimal profile for a process may be different from the one shown based on oven type, component design, fixturing and mix of defects. Please contact Kester if additional profiling advice is needed. TSF-8808 will facilitate excellent wetting in an air reflow environment and can also be used in an inert (nitrogen) environment.


**CLEANING**

TSF-8808 residues are best removed using automated cleaning equipment (in-line or batch). A de-ionized water final rinse is recommended. Water temperatures should be around >40 °C, with water pressure of 45 to 65 psi. For best results, flux residues should be removed as soon as possible, preferably within 4 hours after soldering. Assemblies should be checked for ionic cleanliness levels to maintain the highest standards possible. IPC J-STD-001 specifies a maximum of 1.56 micrograms/cm<sup>2</sup> NaCl equivalent when tested in accordance with IPC-TM-650, Test Method 2.3.25 or 2.3.26.

**SAFETY & WARNING**

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

**STORAGE**

TSF-8808 should be kept at standard refrigeration conditions, 0 to 10 °C (32 to 50 °F). TSF-8808 should be stabilized at room temperature prior to usage. Please contact Kester if you require additional advice with regard to storage and handling of this material. Shelf life is 10 months from date of manufacture when stored at refrigerated conditions and handled properly.

**CONTACT INFORMATION**

To confirm this document is the most recent version, please contact  
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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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