kester®
CONNECTING INNOVATION™

SEMICONDUCTOR MATERIALS

TSF-6592
Lead-Free No-Clean Tacky Soldering Flux

Product Description

Kester TSF-6592 is a No Clean Paste Flux designed as a Lead Free Solution for an array of Lead Free interconnect applications such as flip chip attach, sphere or ball attach, rework/repair of CSPs, BGAs, SMDs, or any Lead Free soldering application that requires a very tacky flux.

Performance Characteristics:

- Compatible with Lead Free alloys such as SnAg, SnCu, SnAgCu, SnAgBi
- Reflow-able with peak temperatures up to 270 °C
- Reflow-able in air and nitrogen
- Bright shiny soldered joints with clear residues
- Aggressive flux on various substrates such as OSP-Cu, Immersion finishes and ENIG
- Clear non-tacky residues
- High tack to minimize skewing of components
- Low voiding
- Stencil Life of 8+ hours (process dependent)
- Classified as ROL0 per J-STD-004
- Compliant to Bellcore GR-78

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

Viscosity (typical): 186 poise
Malcom Viscometer @ 10rpm and 25°C

Initial Tackiness (typical): 152 grams
Tested to J-STD-005, IPC-TM-650, Method 2.4.44

Acid Number: 102 mg KOH/g of flux
Tested to J-STD-004, IPC-TM-650, Method 2.3.13

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

Chloride and 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

	Blank	TSF-6592
Day 1	$1.4 \times 10^9\ \Omega$	$2.1 \times 10^9\ \Omega$
Day 4	$2.6 \times 10^9\ \Omega$	$4.5 \times 10^9\ \Omega$
Day 7	$3.7 \times 10^9\ \Omega$	$7.1 \times 10^9\ \Omega$

Application Notes

Standard Applications:

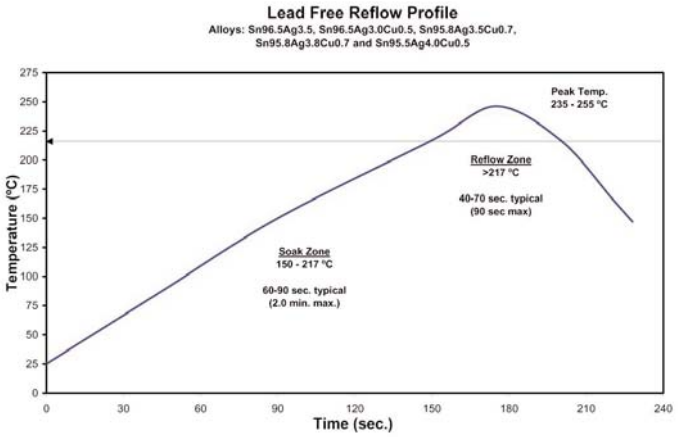
TSF-6592 is designed for stencil/screen printing, rotating drum, slide fluxers and/or syringe applications. Great for rework applications on all PCB packages of various electronic devices. TSF-6592 is great for rework applications on all PCB packages. TSF-6592 can be used in BGA/PGA sphere/pin attachment vehicle or for repair and reballing/repinning. This flux works on flip chip, chip scale package and flip chip bumping sites assemblies as a soldering paste flux.

Printing Parameters:

Temperature/Humidity Optimal ranges are 21-25°C (70-77°F) and 35-65% RH

Recommended Reflow Profiles:

The recommended convection reflow profile for TSF-6592 for Sn96.5Ag3.5, Sn99.3Cu0.7, or the various SnAgCu alloys is shown here. This profile is simply a guideline. As TSF-6592 was engineered to be a versatile, robust interconnect material other reflow profiles would be effective. Your optimal profile may be different from the one shown based on your oven, component design, fixturing and mix of defects. Please contact Kester if you need additional profiling advice.



Cleaning:

TSF-6592 is a no-clean chemistry. The residues do not need to be removed for typical applications. If residue removal is required, call Kester Technical Support.

Storage, Handling, and Shelf Life:

Refrigeration is the recommended optimum storage condition for TSF-6592 to maintain consistent viscosity, reflow characteristics and overall performance. TSF-6592 should be stabilized at room temperature prior to printing. TSF-6592 should be kept at standard refrigeration conditions, 0-10°C (32-50°F). Please contact Kester if you require additional advice with regard storage and handling of this material. Shelf life is 4 months from date of manufacture when handled properly and held at 0-10°C (32-50°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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