

# KESTER® 959T SOLDERING FLUX

Low-Solid, No-Clean Liquid Flux

## DESCRIPTION

Kester 959T Soldering Flux is a no-clean, non-corrosive, liquid flux that is designed for the wave soldering of conventional and surface mount circuit board assemblies. 959T was developed to minimize the formation of micro-solder balls during wave soldering operations. This flux contains a small percentage of rosin (0.5%), which improves solderability, heat stability and surface insulation resistance. 959T offers the best wetting and the shiniest solder joints of any no-clean, solvent-based chemistry. It is a very good flux that can be used for secondary soldering such as touch up and repair. 959T leaves evenly distributed residues for the best cosmetic appearance.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

## FEATURES & BENEFITS

- Minimize micro-solderballs
- Extremely shiny joints
- No streaky, white residues
- Improves soldering performance
- Eliminates the need and expense of cleaning
- Classified as ORL0 per J-STD-004B

## ROHS COMPLIANCE

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2011/65/EU for the stated banned substances.

## TECHNICAL DATA

Category	Results		Procedure/Remarks	
Physical Properties				
Specific Gravity	0.794 ± 0.005		Anton Paar DMA 35 @ 25 °C	
Percent Solids (Typical)	2.9%		Tested to J-STD-004, IPC-TM-650, Method 2.3.34	
Acid Number	21.0 ± 1.0 mg KOH/g of flux		Tested to J-STD-004, IPC-TM-650, Method 2.3.13	
Flash Point	18 °C (25 °F)			
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-004B, 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	
Surface Insulation Resistance (SIR)	Pass		Tested to J-STD-004B, IPC-TM-650, Method 2.6.3.7	
Surface Insulation Resistance (SIR) (Typical)	Pass		Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3	
		Blank	959T PD	959T PU
	Day 1	7.9*10 <sup>9</sup> Ω	1.6*10 <sup>9</sup> Ω	1.7*10 <sup>9</sup> Ω
	Day 4	8.4*10 <sup>9</sup> Ω	1.9*10 <sup>9</sup> Ω	5.3*10 <sup>9</sup> Ω
	Day 7	7.4*10 <sup>9</sup> Ω	1.9*10 <sup>9</sup> Ω	2.8*10 <sup>9</sup> Ω

Recommended in a foam and wave application to remove excess flux from the circuit board and prevent dripping on the preheated surface.

## PROCESSING GUIDELINES

### Process Considerations

The optimum preheat temperature for most circuit assemblies is 90 to 105 °C (194 to 221 °F) as measured on the top or component side of the printed circuit board. Dwell time in the wave is typically 2 to 4 seconds for leaded alloys and 4 to 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-22 Test Kit and procedures 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 airline 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

959T flux residues are non-conductive, non-corrosive and do not require removal in most applications. If residue removal is required, consult MacDermid Alpha Technical Support for further cleaning recommendations.

### Storage, Handling and Shelf Life

959T is flammable. Store away from sources of ignition. Shelf life is 3 years from the date of manufacture when handled properly and held at 10 to 25 °C (50 to 77 °F).

## APPLICATION

959T can be applied to circuit boards by a spray, foam or dip process. Flux deposition should be 120 to 240 µg of solids/ cm<sup>2</sup> (750 to 1500 µg of solids/in<sup>2</sup>). An air knife after the flux tank is

## RECYCLING SERVICES

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area.



## 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.**

## CONTACT INFORMATION

[www.macdermidalpha.com](http://www.macdermidalpha.com)

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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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