

## 48

# Activated Rosin Cored Wire

For Lead-bearing and Lead-free alloys

## Product Description

Kester 48 Activated Rosin Flux for cored solder wire was developed for lead-free applications to enable soldering of most common metals. Kester 48 has performance characteristics far exceeding standard RA fluxes. Kester 48 builds on the performance of its predecessor Kester 44 with “instant-action” wetting to provide fast and reliable solder joints.

### Performance Characteristics:

- Unparalleled wetting performance
- Excellent solderability and fast wetting to a variety of surface finishes
- Eliminates the need and expense of cleaning
- Low smoke and odor
- Low spattering
- Classified as ROL1 per J-STD-004

### Kester 48 vs. Kester 44

- Kester 48 provides a higher level of activity than Kester 44, see Spread Test opposite.
- Kester 48 dramatically reduces splattering by 50+% over Kester 44.
- Kester 48 residues are transparent and nearly colorless compared to the traditional amber appearance of Kester 44.
- Kester 48 was designed for lead-free alloys.

## 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. (Applies only if this core flux is combined with a lead free alloy)

## 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: Fail

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

### Chloride and Bromides: 1.05%

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

|       | <b>Blank</b>                | <b>48</b>                   |
|-------|-----------------------------|-----------------------------|
| Day 1 | $1.6 \times 10^{10} \Omega$ | $1.1 \times 10^{10} \Omega$ |
| Day 4 | $1.2 \times 10^{10} \Omega$ | $9.2 \times 10^9 \Omega$    |
| Day 7 | $1.1 \times 10^{10} \Omega$ | $8.6 \times 10^9 \Omega$    |

### Spread Test (typical):

Tested to J-STD-004, IPC-TM-650, Method 2.4.46

| Flux Core Solder           | Area of Spread mm <sup>2</sup> (in <sup>2</sup> ) |            |
|----------------------------|---------------------------------------------------|------------|
|                            | Sn96.5Ag3.0Cu0.5                                  | Sn63Pb37   |
| 285 Mildly Activated Rosin | 213 (0.33)                                        | 335 (0.52) |
| 275 No-Clean               | 219 (0.34)                                        | 361 (0.56) |
| 44 Activated Rosin         | 220 (0.34)                                        | 342 (0.53) |
| 48 No-Clean                | 245 (0.38)                                        | 419 (0.65) |

## Application Notes

### Availability:

Kester 48 is available in a wide variety of alloys, wire diameters and flux percentages. For most applications, Sn63Pb37 or Sn96.5Ag3.0Cu0.5 is used. Consult the alloy temperature chart in Kester's product catalog for a comprehensive alloy list. The standard wire diameter for most applications is 1.00mm (0.031in). Wire diameters range from 0.25 - 6.00mm (0.010 to 0.250in). A "Standard Wire Diameters" chart also is included in Kester's product catalog. The amount of flux in the wire dictates the ease of soldering for an application. For most applications, core 66 (3.3% flux by weight) is recommended. Other core sizes, 50 and 58, (1.1% and 2.2% respectively) are available. Kester 48 is packaged on spools of different sizes to accommodate a variety of applications.

### Process Considerations:

Solder iron tip temperatures should range between 260-370°C (500-700°F) for Sn63Pb37 and Sn62Pb36Ag02 alloys and 315-400°C (600-750°F) for lead-free alloys. Heat both the land area and component lead to be soldered with the iron prior to adding Kester 48 cored wire. Apply the solder wire to the land area or component lead. Do not apply the wire directly to the soldering iron tip. If needed, Kester 1544 activated rosin flux may be used as a compatible liquid flux to aid in reworking soldered joints.

### Cleaning:

The 48 residues are non-conductive, non-corrosive and do not require removal in most applications. The flux residues are comparable to a conventional RA. If residue removal is required, call Kester Technical Support.

### Storage, Handling, and Shelf Life:

Storage must be in a dry, non-corrosive environment. The surface may lose its shine and appear a dull shade of grey. This is a surface phenomena and is not detrimental to product functionality. Flux cored solder wire has a limited shelf life determined by the alloy used in the wire. For alloys containing > 70% lead, the shelf life is two years from date of manufacture. Other alloys have a shelf life of three years from date of manufacture.

### 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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