MacDermid Alpha ELECTRONICS SOLUTIONS

TECHNICAL DATA SHEET

KESTER® 245 FLUX-CORED WIRE

No-Clean Cored Wire for Lead-bearing and Lead-free Alloys

DESCRIPTION

Kester 245 Flux-Cored Wire is designed to complement low residue liquid fluxes being used by the electronics industry. The chemistry is based on some of the same principles that have been safely used for years in mildly activated rosin fluxes. The use of 245 results in visually acceptable assemblies without cleaning, yet soldering quality and efficiency is comparable to that obtained with mildly activated rosin flux. 245 was formerly classified as Type LR per MIL-F-14256.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Highly reliable post-soldering residue
- Minimal residue
- Compatible with leaded and lead-free alloys
- Classified as ROL0 per J-STD-004

ROHS COMPLIANCE

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2011/65/EU for the stated banned substances. (Applies only if this core flux is combined with a lead-free alloy)

TECHNICAL DATA

Category	Results	Procedure/Remarks
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

<table>
<tr><th>Category</th><th>Results</th><th>Procedure/Remarks</th></tr>
<tr><td>Chloride and Bromides</td><td>None Detected</td><td>Tested to J-STD-004, IPC-TM-650, Method 2.3.35</td></tr>
<tr><td>Fluorides by Spot Test</td><td>Pass</td><td>Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1</td></tr>
<tr><td>Spread Test (typical)</td><td colspan="2">Tested to J-STD-004, IPC-TM-650, Method 2.4.46
<table>
<tr><th></th><th>Area of Spread mm² (in²)</th></tr>
<tr><td>Plastic Rosin Core</td><td>194 (0.30)</td></tr>
<tr><td>285 Mildly Activated Rosin</td><td>335 (0.52)</td></tr>
<tr><td>245 No-Clean</td><td>348 (0.54)</td></tr>
</table></td></tr>
<tr><td>Surface Insulation Resistance (SIR) 40 °C/90% RH, IPC (typical)</td><td>Pass</td><td>Tested to J-STD-004B, IPC-TM-650, Method 2.6.3.7</td></tr>
<tr><td>Surface Insulation Resistance (SIR) IPC (typical)</td><td>Pass</td><td>Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3
Test Conditions: 85 °C, 85% RH, 7 days, 100V
<table>
<tr><th></th><th>Blank</th><th>245</th></tr>
<tr><td>Day 1</td><td>$1.33*10^{10}$ Ω</td><td>$1.56*10^{8}$ Ω</td></tr>
<tr><td>Day 4</td><td>$8.78*10^{9}$ Ω</td><td>$1.48*10^{9}$ Ω</td></tr>
<tr><td>Day 7</td><td>$7.53*10^{9}$ Ω</td><td>$2.76*10^{9}$ Ω</td></tr>
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PROCESSING GUIDELINES

Solder iron tip temperatures are most commonly between 315 to 343 °C (600 to 650 °F) for Sn63Pb37 and Sn62Pb36Ag02 alloys, and 371 to 400 °C (700 to 750 °F) for lead-free alloys. Heat both the land area and component lead to be soldered with the iron prior to touching the land with the cored wire. Do not apply the wire directly to the soldering iron tip. If needed, Kester 951 or 952-D6 no clean flux may be used as a compatible liquid flux to aid in reworking soldered joints. Kester 951 and 952-D6 are available in Flux-Pens® for optimum board cleanliness.

Cleaning

The 245 flux residues are non-corrosive, non-conductive and do not require removal in most applications. IPA will not clean the residues off the surface of the circuit board after the soldering process. A saponifier or cleaning agent specifically designed to clean a no-clean flux is required to clean the residues. Please contact MacDermid Alpha Technical Support for further information.

Storage, Handling and Shelf Life

Storage must be in a dry, non-corrosive environment between 10 to 40 °C (50 to 104 °F). The surface may lose its shine and appear a dull shade of grey. This is a surface phenomenon and is not detrimental to product functionality. Flux-cored solder wire has a shelf life determined by the alloy used in the wire. For alloys containing more than 70% lead, the shelf life is 2 years from the date of manufacture. Other alloys have a shelf life of 3 years from the date of manufacture.

AVAILABILITY

245 cored wire is available in a wide variety of alloys, wire diameters, flux percentages and roll sizes in both leaded and lead free alloys.

Note: Core size 50, 58 and 66 = 1.1%, 2.2% and 3.3% flux core.

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

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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