

## 291S Preforms

### No-Clean Flux Coating for Preforms

---

#### Product Description

Kester 291S is a no-clean flux coating that was developed based on some of the same principles that have been safely used for years in no-clean liquid fluxes. 291S results in visually acceptable assemblies without cleaning, yet soldering quality and efficiency is not compromised. 291S is an externally coated flux material that exhibits excellent solderability on a wide variety of surface finishes including tin-plate, OSP copper and HASL.

#### Performance Characteristics:

- Highly reliable post-soldering residue
- Minimal residue
- Eliminates the need and expense of cleaning
- Compatible with leaded and lead-free alloys
- Classified as ORL0 per J-STD-004

#### RoHS Compliance

Kester does not determine any applicable Restriction of Hazardous Substances (RoHS) exemptions for our lead containing products at the user level.

#### 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: <0.05%

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

**Surface Insulation Resistance (SIR): Pass**

Tested to J-STD-004B, IPC-TM-650, Method 2.6.3.7

**Surface Insulation Resistance (SIR): Pass**

Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	291S
Day 1	9.9*10 <sup>9</sup> Ω	4.0*10 <sup>9</sup> Ω
Day 4	8.4*10 <sup>9</sup> Ω	3.6*10 <sup>9</sup> Ω
Day 7	7.8*10 <sup>9</sup> Ω	3.1*10 <sup>9</sup> Ω

**Availability**

Kester Preforms are available in a wide variety of shapes, sizes and alloys and are offered with and without flux. Preforms can be coated in a variety of weight percents with typical flux ranges available from 0.75 to 2.5% by weight. Consult the alloy temperature chart on Kester's website for a comprehensive alloy list. The amount of flux on the preform dictates the ease of soldering for an application. Preforms are typically packaged in bulk containers but can be placed in specialty packaging to accommodate a variety of applications.

**Process Considerations**

Preforms are placed into position between the surfaces to be soldered. The preform area can then be heated locally with a soldering iron, torch, hot air tool or the whole assembly passed through a suitable oven. The assembly should be heated above the liquidus temperature of the solder alloy being used. Optimum temperatures and times for reflow and intermetallic formation are dependent on assembly, process and alloy used. Preforms allow manufacturing soldering operations to be accomplished without the use of additional liquid fluxing agents. This reduces throughput time and increases process yield by delivering precisely the right amount of flux to solder surfaces together. After soldering has been completed, the flux residues can be left on the assembly without affecting reliability of the product.

**Cleaning**

Residues from preforms are non-conductive, non-corrosive and do not require removal in most applications. If residue removal is required, contact Kester Technical Support.

## Storage, Handling and Shelf Life

Storage must be in a dry, non-corrosive environment between 10 to 40 °C (50 to 140 °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 coated preforms have a shelf life determined by the alloy used in the preforms. 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.

## Health and Safety

This product, during handling or use, may be hazardous to your health or the environment. Read the Safety Data Sheet and warning label before using this product. Safety Data Sheets are available at this [link](#).

## Contact Information

To confirm this document is the most recent version, please contact [Assembly@MacDermidAlpha.com](mailto:Assembly@MacDermidAlpha.com)

<b>North America</b> 109 Corporate Blvd. South Plainfield, NJ 07080, USA 1.800.253.7837	<b>Europe</b> Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400	<b>Asia Pacific</b> 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100
--	---	--

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

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. No statement or recommendation shall constitute a representation unless set forth in an agreement signed by officers of seller and manufacturer. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY IS MADE. The following warranty is made in lieu of such warranties and all other warranties, express, implied, or statutory. Products are warranted to be free from defects in material and workmanship at the time sold. The sole obligation of seller and manufacturer under this warranty shall be to replace any noncompliant product at the time sold. Under no circumstances shall manufacturer or seller be liable for any loss, damage or expense, direct, indirect, incidental or consequential, arising out of the inability to use the product. Notwithstanding the foregoing, if products are supplied in response to a customer request that specifies operating parameters beyond those stated above, or if products are used under conditions exceeding said parameters, the customer by acceptance or use thereof assumes all risk of product failure and of all direct, indirect, incidental and consequential damages that may result from use of the products under such conditions, and agrees to exonerate, indemnify, defend and hold harmless MacDermid, Incorporated and its affiliates therefrom. No suggestion for product use nor anything contained herein shall be construed as a recommendation to use any product in a manner that infringes any patent or other intellectual property rights, and seller and manufacturer assume no responsibility or liability for any such infringement.

© 2019 MacDermid, Inc. and its group of companies. All rights reserved. "R" and "TM" are registered trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.