

## PRODUCT DATA SHEET

# 3590-TX No-Residue Wave Solder Flux

### Introduction

**3590-TX No-Residue Wave Solder Flux** is a low solids, non-halide rosin/resin-free flux designed to eliminate post-cleaning operations. Very effective flux activators provide superior solderability, reduced defects, and shiny solder joint formation.

**3590-TX** has a wide process window with excellent wetting capabilities, leaving no residue and high surface insulation resistance.

### Features

- Eliminates the need for cleaning
- Good solderability
- Low defects
- Compatible with conformal coatings without cleaning
- Meets Bellcore specification TR-NWT-000078

### Process Recommendations

**3590-TX** is best applied by ultrasonic spray. For best results, the following guidelines should be adhered to:

- In spray applications, a thin uniform flux deposition of 500–1,000 micrograms of flux solids per square inch should be applied as a starting point.
- Flux application variables, including flux deposition and uniformity, are integral factors when soldering with a no-clean chemistry. Topside board temperature should be approximately 93–104°C (200–220°F). Preheat temperatures can differ based on wave soldering equipment, fluxes, board thickness, components, and conveyor speed.

### Packaging

- 5-gallon containers
- 55-gallon drums

### Safety

All fluxes with low flash points should be handled with caution. Store in a dry, well ventilated area away from sparks, flames, and direct heat. Please refer to the Safety Data Sheet within the product shipment, or contact our local team to receive a copy.

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices. All Indium Corporation's products and solutions are designed to be commercially available unless specifically stated otherwise.

All of Indium Corporation's solder paste and preform manufacturing facilities are IATF 16949:2016 certified. Indium Corporation is an ISO 9001:2015 registered company.

## From One Engineer To Another®

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### Bellcore Surface Insulation Resistance Test

Pattern	Boards	Initial Reading*	Final Reading*
Standard Bellcore	Control	7.06 x 10 <sup>13</sup>	8.11 x 10 <sup>13</sup>
	Pattern Up	4.19 x 10 <sup>10</sup>	4.88 x 10 <sup>11</sup>
	Pattern Down	3.43 x 10 <sup>12</sup>	8.55 x 10 <sup>13</sup>

\*All readings expressed in Ohms.

### Bellcore Electromigration Resistance Test

Pattern	Boards	Initial Reading*	Final Reading*
IPC-B25A	Control	1.33 x 10 <sup>10</sup>	1.42 x 10 <sup>10</sup>
	Pattern Up	5.38 x 10 <sup>9</sup>	8.79 x 10 <sup>9</sup>
	Pattern Down	1.69 x 10 <sup>9</sup>	3.94 x 10 <sup>8</sup>

\*All readings expressed in Ohms.

### Physical Properties

Test	Result	
	3590-TX	16-3000
Color	Clear	Clear
Specific Gravity @25°C (77°F) @15.5°C (60°F)	0.806	0.783
	0.813	0.799
Acid Value	22.0	0
Solids Content	2.5	0
Flash Point (°F TCC)	54	54
J-STD-004 Flux Type	ORLO	N/A

All information is for reference only.

Not to be used as incoming product specifications.

### Shelf Life

The shelf life for this product is 2 years in an unopened container stored at less than 32.2°C (90°F). Shelf life for an opened container will vary depending on storage conditions, including open time, temperature, and humidity. For longest shelf life of an opened container, replace cap to reduce alcohol evaporation and store in a cool, dry environment.

### Technical Support

Indium Corporation's internationally experienced engineers provide in-depth technical assistance to our customers. Thoroughly knowledgeable in all facets of Materials Science as it applies to the electronics and semiconductor sectors, Technical Support Engineers provide expert advice in solder properties, alloy compatibility and selection of solder preforms, wire, ribbon, and paste. Indium Corporation's Technical Support Engineers provide rapid response to all technical inquiries.



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