

PRODUCT DATA SHEET

3590-T No-Residue Wave Solder Flux

Introduction

3590-T is a low solids, non-halide, rosin/resin-free flux designed to eliminate post-cleaning operations. The effective flux activators provide superior solderability of surface mount, mixed technology, and through-hole electronic assemblies.

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

Features

- Meets Bellcore specification TR-NWT-000078
- Meets IPC J-STD-004 flux type ORLO
- Eliminates the need for cleaning
- Excellent wetting and solderability
- Compatible with conformal coatings without cleaning
- Will not interfere with pin testing

Process Recommendations

3590-T is best applied by ultrasonic spray, but can also be applied by foam.

Controlled application such as flux deposition and uniformity are integral factors when soldering with a no-clean chemistry. Flux deposition rate of 500–1,000 micrograms per square inch of flux solids should be applied as a starting point. Ideal topside board temperature is approximately 100°C (210°F). Preheat temperatures can differ based on wave soldering equipment, board thickness, components, and conveyor speed.

3590-T uses 16-3000 Thinner to maintain specific gravity or acid value. Thinner is not required in an enclosed fluxing system.

Acid value should be monitored using a digital titrator when foaming to control flux concentration. To prevent contamination on assemblies in an open fluxing system, periodic replacement of flux is recommended.

Physical Properties

Test	Result	
	3590-T	16-3000
Color	Clear	Clear
Specific Gravity @25°C (77°F) @15.5°C (60°F)	0.801 0.808	0.783 0.790
Acid Value	16.0	0
Solids Content	1.85	0
Flash Point (°F TCC)	84	54
J-STD-004 Flux Type	ORLO	N/A

*All information is for reference only.
Not to be used as incoming product specifications.*

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. Consult Safety Data Sheet for full details.

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.

Safety Data Sheets

The SDS for this product can be found online at <http://www.indium.com/sds>

From One Engineer To Another®



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Belcore Surface Insulation Resistance Test

Pattern	Boards	Initial Reading*	Final Reading*
Standard Bellcore	Control	7.06×10^{13}	8.11×10^{13}
	Pattern Up	8.20×10^{10}	1.14×10^{12}
	Pattern Down	6.64×10^{12}	1.32×10^{14}

*All readings expressed in Ohms.

Belcore Electromigration Resistance Test

Pattern	Boards	Initial Reading*	Final Reading*
IPC-B25A	Control	1.33×10^{10}	1.42×10^{10}
	Pattern Up	8.06×10^9	1.23×10^{10}
	Pattern Down	2.12×10^9	4.54×10^9

*All readings expressed in Ohms.

IPC Surface Insulation Resistance Test

Pattern	Boards	24 Hours*	96 Hours*	168 Hours*
IPC-B25A	Control	1.81×10^{10}	9.96×10^9	7.55×10^9
	Pattern Up	1.72×10^{10}	1.23×10^{10}	6.83×10^9
	Pattern Down	9.86×10^9	4.54×10^9	4.64×10^9

*All readings expressed in Ohms.

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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.

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