

Product Data Sheet

Wave Solder Flux

3590-TX No-Residue

Features

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

Introduction

Wave Solder Flux 3590-TX No-Residue 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.

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.

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

Bellcore Surface Insulation Resistance Test

Test Pattern	Boards	Initial Reading*	Final Reading*
Standard Bellcore	Control	7.06 X 10 ¹³	8.11 X 10 ¹³
	Pattern up	4.19 X 10 ¹⁰	4.88 X 10 ¹¹
	Pattern down	3.43 X 10 ¹²	8.55 X 10 ¹³

*All readings expressed in ohms

Bellcore Electromigration Resistance Test

Test Pattern	Boards	Initial Reading*	Final Reading*
IPC B25A	Control	1.33 X 10 ¹⁰	1.42 X 10 ¹⁰
	Pattern up	5.38 X 10 ⁹	8.79 X 10 ⁹
	Pattern down	1.69 X 10 ⁹	3.94 X 10 ⁸

*All readings expressed in ohms

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, direct heat. Consult Material 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 Material 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.

Material Safety Data Sheet

The MSDS for this product can be found online at <http://www.indium.com/techlibrary/msds.php>

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