

Product Data Sheet

Wave Solder Flux

WF-9942 No-Residue Pb-Free

Features

- Use with Pb-Free and Tin/Lead alloys
- Excellent solderability on all board finishes
- Superior hole fill
- Reduces solder balling

Introduction

WF-9942 Wave Soldering Flux is a no-clean flux specifically developed for wave soldering, mixed-technology and through-hole electronic assemblies. This formulation provides greater heat stability required for the increased temperatures used in Pb-free wave soldering processes.

WF-9942 is formulated to provide a wide process window with excellent solderability, superior hole fill, and reduced solder balling on all surface finishes. This product can be used with Tin/Copper, Tin/Silver/Copper, and Tin/Lead alloys.

Process Recommendations

WF-9942 should be applied by ultrasonic spray for best results. Topside board temperatures can range up to 149°C (300°F) and contact time in the solder wave can be as long as 5 seconds, depending on equipment, and board complexity. This product can be used in single and dual wave configurations. Typical conveyor speed is 3-6 ft/min.

In spray applications, a thin uniform flux deposition of 500-1,000 micrograms per square inch of flux solids should be applied as a starting point.

WF-9942 should not require thinning when used in a closed spray fluxer system. If thinning is required, use Indium Corporation's 16-3000 flux thinner.

Physical Properties

Test	Result	
	WF-9942	16-3000
Color:	Clear	Clear
Specific Gravity: @25°C (77°F)	0.828	0.783
@15.5°C (60°F)	0.833	0.788
Acid Value	35.0	0
Solids Content	4.37	0
Flash Point (°F TCC)	54	54
J-STD-004 Flux Type	ORLO	N/A

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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Wave Solder Flux WF-9942 No-Residue Pb-Free

IPC Surface Insulation Resistance Test

Test Pattern	Boards	24 Hours*	96 Hours*	168 Hours*
IPC B24	Control	6.45 X 10 ⁹	7.85 X 10 ⁹	6.37 X 10 ⁹
	Pattern up	2.10 X 10 ¹⁰	1.67 X 10 ¹⁰	1.43 X 10 ¹⁰
	Pattern down	2.25 X 10 ⁹	4.13 X 10 ⁹	4.68 X 10 ⁹

*All readings expressed in ohms

IPC ECM/Telcordia EM Resistance Test

Test Pattern	Boards	96 Hours*	500 Hours*
IPC-B25A	Control	9.96 X 10 ¹⁰	9.03 X 10 ¹⁰
	Pattern up	6.22 X 10 ¹⁰	1.05 X 10 ¹¹
	Pattern down	4.57 X 10 ⁹	5.76 X 10 ¹⁰

*All readings expressed in ohms

Telcordia GR-78 Surface Insulation Resistance Test

Test Pattern	Boards	24 Hours*	96 Hours*
IPC-B25 A	Control	8.51 X 10 ¹²	8.73 X 10 ¹²
	Pattern up	2.44 X 10 ¹¹	2.82 X 10 ¹¹
	Pattern down	6.43 X 10 ¹²	6.71 X 10 ¹²

*All readings expressed in ohms

This product data sheet is provided for general information only. It is not intended, described which are sold subject exclusively to written warranties and limitations and shall not be construed, to warrant or guarantee the performance of the products thereon included in product packaging and invoices.

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