

Product Data Sheet

WF-7745 Wave Solder Flux

VOC-Free, Halogen-Free, No-Clean

Features

- No green from corrosion test, commonly found with other VOC-free fluxes
- Compatible with Pb-free and Sn/Pb solders
- Superior hole-fill

Introduction

WF-7745 is a water-based, VOC-free, halogen-free, no-clean wave solder flux designed for wave soldering through-hole, bottom-side surface mount and mixed-technology circuit boards. It performs well with both Pb-free and Sn/Pb solders and processes. **WF-7745** is non-flammable, dramatically reducing volatile organic compound emissions and eliminating special flammable storage conditions.

WF-7745 easily passes the IPC TM-650 copper mirror test. It also passes the IPC TM-650 copper corrosion test, showing no evidence of green. This high degree of corrosion resistance is virtually unheard of with water-based no-clean fluxes.

Even with this high degree of corrosion resistance, **WF-7745** solders as well as many halogen-containing, low solids, no-clean fluxes, yielding superior hole-fill and reduced solder balling.

Physical Properties

Test	Result
	WF-7745
Color	Clear
Specific Gravity: @25°C (77°F)	1.013
@15°C (60°F)	1.013
Acid Value: mgKOH/g flux	39.5
mgKOH/g flux solids	936.0
Solids Content	4.22
Flash Point (°F TCC)	None
J-STD-004 Flux Type	ORLO

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

IPC Surface Insulation Resistance

Board	24 Hours	96 Hours	168 Hours
Control	1.62E+13	1.37E+13	7.42E+12
Pb-Free pattern up	6.47E+12	5.00E+12	1.14E+13
Pb-Free pattern down	9.81E+12	9.96E+12	8.04E+12
Tin/Lead pattern up	6.85E+12	3.65E+12	3.09E+12
Tin/Lead pattern down	5.99E+12	1.82E+12	1.66E+12

All readings expressed in ohms

IPC ECM Resistance Test

Board	96 Hours	596 Hours
Control	1.93E+12	2.07E+12
Pb-Free pattern up	4.34E+12	1.40E+12
Pb-Free pattern down	2.73E+13	1.02E+12
Tin/Lead pattern up	7.19E+12	2.96E+12
Tin/Lead pattern down	7.09E+12	2.74E+12

All readings expressed in ohms

Process Recommendations

WF-7745 is a "spray only" flux. It cannot be foamed. This design decision was made to ensure no halogens and assist with passing the IPC TM-650 corrosion tests. Spray processes provide a more reliable and repeatable process and reduces the need for monitoring and thinning the flux concentration.

Alloy	Flux Deposition Rate µg/inches ² solids	Preheat Temperature		Preheat Time (in seconds)	Wave Contact Time (in seconds)	Pot Temp °C
		Top °C	Bottom °C			
Pb-free	1000-1500	110-135	130-155	50-70	3 to 5	260-270
63Sn/37Pb	500-1000	100-125	125-135	50-70	3 to 5	245-260

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It is expected that virtually all of the flux residue will either volatilize or be carried away by the solder wave. Care should be taken to not over-flux the board and deposit a large amount of flux on the top side of the circuit board where the residue could accumulate and not see sufficient heat to drive away the flux solids.

Although not generally required or recommended, any remaining residues of **WF-7745** may be washed away with water.

Packaging and Transportation

- 1 gallon units
- 5 gallon (20 litre) units
- 55 gallon (200 litre) drums

WF-7745 is water-based and may freeze during very cold winter months. Freezing may cause some separation which would require remixing upon warming. Recommended storage temperature is 40°F (5°C) to 80°F (27°C).

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>

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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