

Product Data Sheet

# Wave Solder Flux

## WF-9945 Halogen-Free

### Features

- Halogen-free formulation
- Superior hole-fill
- Use with Pb-Free and Sn/Pb processes

### Introduction

**WF-9945** is a halogen-free no-clean flux developed for wave soldering mixed-technology and through-hole electronics assemblies.

**WF-9945** is formulated to provide excellent wetting and superior hole-fill. This wave flux can be used with tin-copper, tin-silver-copper, and tin-lead alloys.

### Process Recommendations

Flux application can be by spray or foam. Spray application provides a more reliable and repeatable method for application. For most Pb-Free processes flux application is from 1000-2600 µg/in<sup>2</sup> (155-400 µg/cm<sup>2</sup>) flux solids. Preheat temperature is 200-240°F (93-115°C) topside board temperature. Typical Pb-Free pot temperatures are 500-518°F (260-270°C). Conveyor speed should be adjusted to provide 4-5 second contact time.

### Physical Properties

Test	Result
	<b>WF-9945</b>
<b>Color:</b>	<b>Amber</b>
<b>Specific Gravity:</b> @25°C (77°F)	<b>0.796</b>
@15°C (60°F)	<b>0.802</b>
<b>Acid Value mgKOH/g flux</b>	<b>14.4</b>
<b>mgKOH/g flux solids</b>	<b>249.6</b>
<b>Solids Content</b>	<b>5.77</b>
<b>Flash Point (°F TCC)</b>	<b>54</b>
<b>J-STD-004 Flux Type</b>	<b>ROLO</b>

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

### IPC J-STD-004A SIR

Test Pattern	Boards	24 Hours*	96 Hours*	168 Hours*
IPC B24	Control	1.87 E+10	1.23 E+10	8.58 E+09
	Pattern up	1.82 E+10	1.19 E+10	8.51 E+09
	Pattern down	2.46 E+10	1.59 E+10	1.09 E+10

\*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>

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.

Form No. 98455 R2

[www.indium.com](http://www.indium.com)

[askus@indium.com](mailto:askus@indium.com)

ASIA: Singapore, Cheongju: +65 6268 8678  
 CHINA: Suzhou, Shenzhen, Liuzhou: +86 (0)512 628 34900  
 EUROPE: Milton Keynes, Torino: +44 (0) 1908 580400  
 USA: Utica, Clinton, Chicago: +1 315 853 4900

