

## Product Data Sheet

# OnSpec® Solar-Grade Tabbing Flux GS-1414 VOC-Free

### Features

- Excellent Surface Wetting
- Eliminates Cleaning
- Wide Process Window
- Use with Pb-Free and Sn/Pb

### Introduction

**Tabbing Flux GS-1414** is a no-clean flux specifically developed for Pb-free solar tabbing/stringing applications. Its water-based, nonflammable formulation dramatically reduces VOC emissions and eliminates special storage requirements. A wide process window provides excellent solderability on difficult to solder assemblies.

### Process Recommendations

**Tabbing Flux GS-1414** can be applied via dipping tank. It should not require thinning, however, if thinning is required, use Indium Corporation's 16-3000 flux thinner.

Because **Tabbing Flux GS-1414** is water-based, it does not require frequent acid value monitoring. If thinning is required, deionized should be used.

**Tabbing Flux GS-1414** may freeze if exposed to temperatures below 0°C (32°F). If the flux becomes frozen, bring to room temperature then agitate. The material is not affected by freezing.

### Physical Properties

Test	Result
Color:	Clear
Specific Gravity: @25°C (77°F)	1.014
@15.5°C (60°F)	1.014
Acid Value	36
Solids Content	5.76
Flash Point	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

Test Pattern	Board	24 Hours	96 Hours	168 Hours
IPC B24	Control	2.95 X 10 <sup>13</sup>	2.08 X 10 <sup>13</sup>	1.56 X 10 <sup>13</sup>
	Pattern up	8.93 X 10 <sup>9</sup>	9.10 X 10 <sup>9</sup>	6.28 X 10 <sup>9</sup>
	Pattern down	1.32 X 10 <sup>9</sup>	2.71 X 10 <sup>9</sup>	3.19 X 10 <sup>9</sup>

All readings expressed in ohms

### IPC ECM/Telcordia EM Resistance Test

Test Pattern	Board	96 Hours	596 Hours
IPC B25A	Control	9.97 X 10 <sup>10</sup>	9.03 X 10 <sup>10</sup>
	Pattern up	3.88 X 10 <sup>10</sup>	1.16 X 10 <sup>11</sup>
	Pattern down	5.23 X 10 <sup>9</sup>	3.62 X 10 <sup>11</sup>

All readings expressed in ohms

### Telcordia GR-78 Surface Insulation Resistance Test

Test Pattern	Board	Initial Reading	Final Reading
IPC B25A	Control	8.69 X 10 <sup>12</sup>	1.40 X 10 <sup>13</sup>
	Pattern up	3.20 X 10 <sup>11</sup>	7.02 X 10 <sup>11</sup>
	Pattern down	6.75 X 10 <sup>11</sup>	4.72 X 10 <sup>11</sup>

All readings expressed in ohms

### Packaging

- 1 pint evaluation size container:  
IPN # FLUXGS1414BFWV-84375-1PT
- 1 gallon standard size container:  
IPN # FLUXGS1414BFWV-84375-1GL
- 5 gallon container
- 5 liter container
- Other packaging available upon request

### 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 solar, 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, and shall not be construed, to warrant or guarantee the performance of the products

described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices.

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Form No. 98428 R3

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