

## Product Data Sheet

# OnSpec® Solar-Grade Tabbing Flux GS-5454 Resin-Based

### Features

- Formulated for IR or hot bar reflow
- Excellent bond strength
- Superior wetting

### Introduction

**Tabbing Flux GS-5454** is a no-clean flux specifically developed for solar tabbing/stringing applications. It is formulated to provide a wide process window and can be used with Sn/Cu, Sn/Ag/Cu, and Sn/Pb alloys.

### Process Recommendations

**Tabbing Flux GS-5454** can be applied via dipping tank. It should not require thinning, however, if thinning is required, use Indium Corporation's 16-3000 flux thinner.

### Physical Properties

Test	Result	
	GS-5454	16-3000
Color:	Straw	Clear
Specific Gravity: @25°C (77°F)	0.800	0.783
@15.5°C (60°F)	0.806	0.790
Acid Value	25.0	None
Solids Content	4.31	0
Flash Point (°F TCC)	54	54
J-STD-004 Flux Type	ORLO	N/A

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

### Packaging

- 1 pint evaluation size container:  
IPN #FLUXGS5454BFWV-84273-1PT
- 1 gallon container
- 5 gallon container
- 5 liter container
- Other packaging available upon request

### Safety

Any 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.

### IPC Surface Insulation Resistance Test

Test Pattern	Boards	24 Hours*	96 Hours*	168 Hours*
IPC B25A	Control	1.74 X 10 <sup>10</sup>	5.60 X 10 <sup>9</sup>	3.76 X 10 <sup>9</sup>
	Pattern up	1.18 X 10 <sup>10</sup>	7.10 X 10 <sup>9</sup>	5.55 X 10 <sup>9</sup>
	Pattern down	8.50 X 10 <sup>9</sup>	3.49 X 10 <sup>9</sup>	3.21 X 10 <sup>9</sup>

\*All readings expressed in ohms

### Bellcore Surface Insulation Resistance Test

Test Pattern	Boards	Initial Reading*	Final Reading*
Standard Bellcore	Control	2.68 X 10 <sup>13</sup>	1.88 X 10 <sup>13</sup>
	Pattern up	3.18 X 10 <sup>12</sup>	3.34 X 10 <sup>12</sup>
	Pattern down	3.27 X 10 <sup>13</sup>	3.48 X 10 <sup>13</sup>

\*All readings expressed in ohms

### Bellcore Electromigration Insulation Resistance Test

Test Pattern	Boards	Initial Reading*	Final Reading*
IPC-B25A	Control	6.51 X 10 <sup>11</sup>	3.01 X 10 <sup>11</sup>
	Pattern up	1.18 X 10 <sup>10</sup>	8.58 X 10 <sup>9</sup>
	Pattern down	1.14 X 10 <sup>10</sup>	7.39 X 10 <sup>9</sup>

\*All readings expressed in ohms

### 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, 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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