

# ALPHA® PV-38i

## No-Clean Tabbing and Stringing Flux

### DESCRIPTION

**ALPHA PV-38i** is a zero rosin, no-clean flux specifically designed to meet the demanding requirements of the photovoltaic industry. This tabbing and stringing flux has the lowest solids formula (1.10%) available in the industry. **ALPHA PV-38i** also employs a unique proprietary activator system that limits pollution inside tabbing and stringing equipment and spray nozzles, with practically zero residue after soldering. This formula also allows an extended shelf life versus many other competitive fluxes in the industry. The unique chemistry of **ALPHA PV-38i** provides excellent soldering with fast wetting in standard module assembly processes; using widely used (preheat and soldering) methods for both spray on cell or dip applications.

**ALPHA PV-38i** is an alcohol based, low pollution formulation delivering reliability in both Pb-free and SnPb applications. Additionally it provides excellent solder joint cosmetics with uniform tack free residues providing low equipment maintenance. Cells are cosmetically clean and dry after soldering.

### FEATURES & BENEFITS

- Lowest solids level tabbing & stringing flux in the market
- Minimal equipment maintenance and cleaning
- Fast wetting
- High reliability
- Defect-free soldering
- High throughput processing
- Can be applied by common spray or dip methods
- Compatible with a wide range of EVA materials
- 720 day shelf life
- RoHS & REACH compliant

### APPLICATION

**ALPHA PV-38i** flux is engineered for use in most standard solar module assembly applications, non-contact and high speed systems. Perfect for processes using no pre-heat or low temperature pre-heating along with standard temperature reflow, no special cooling or pre-bake is required. Care should be taken to ensure flux is applied only to those areas being soldered and to avoid overspray or other excessive loading. Like all no-clean fluxes, no post process cleaning is needed.

**ALPHA PV-38i** flux can be maintained by titration. Assistance in controlling the flux by this method can be obtained through our Customer Technical Service department. Acid number should be controlled between 4.92 to 7.39.

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## TECHNICAL DATA

| Item                              | Typical Values   | Item                             | Typical Values |
|-----------------------------------|--|----------------------------------|----------------|
| Appearance                        | Clear,<br>Colorless Liquid   | pH, (5% aqueous)                 | ~3.5           |
| Solids Content,<br>wt/wt          | 1.10 ± 0.2%  | Flash Point (T.C.C.)             | 11.7°C         |
| Specific Gravity<br>@ 25°C (77°C) | 0.798 - 0.812  | Shelf Life<br>(from Date of Mfg) | 720 Days       |
| Acid Number<br>(mg KOH/g)         | 5.5<br>Note: Acid# is based on the "as<br>manufactured" flux. PV-38i contains a<br>liquid ingredient which activates during<br>soldering, greatly improving wetting. | IPC J-STD-004A<br>Designation    | ORL0           |

## CORROSION AND ELECTRICAL TESTING

### CORROSION TEST

| Test   | Requirement                   | Results |
|--|-------------------------------|---------|
| Silver Chromate Paper<br>IPC-TM 650 Test Method 2.3.33 | No detection of halide        | Pass    |
| Copper Mirror Tests<br>IPC-TM 650 Test Method 2.6.15   | No complete removal of copper | Pass    |
| Copper Corrosion Test<br>IPC-TM 650 Test Method 2.3.32 | No evidence of corrosion      | Pass    |

### J-STD-004A SURFACE INSULATION RESISTANCE

| Test                           | Conditions           | Requirements              | Results                   |
|--------------------------------|----------------------|---------------------------|---------------------------|
| "Comb-Down" - Uncleaned        | 85° C/85% RH, 7 days | > 1.0 x 10 <sup>8</sup> Ω | 8.65 x 10 <sup>11</sup> Ω |
| "Comb-Up" - Uncleaned          | 85° C/85% RH, 7 days | > 1.0 x 10 <sup>8</sup> Ω | 6.47 x 10 <sup>12</sup> Ω |
| IPC J-STD-004 - Control Boards | 85° C/85% RH, 7 days | > 1.0 x 10 <sup>9</sup> Ω | 4.18 x 10 <sup>12</sup> Ω |

IPC Test Condition (per J-STD-004): 85C/85%RH/7days/-50V, measurement @ 100V/IPC B-24 board (0.4mm lines, 0.5mm spacing). All values in ohms.

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### STORAGE AND SHELF LIFE

Flux is stable up to 720 days when stored in original unopened container at (6-43°C).

### STORAGE

ALPHA PV-38i meets RoHS requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2011/65/EU for the stated banned substances.

Precautions for handling and use:

- Use in well ventilated areas, DO NOT SMOKE. Avoid prolonged or repeated contact with the skin by the use of solvent resistant gloves.
- Flammable, keep away from sparks and open flames. Remember, empty containers can still be a flammable hazard from residual vapors.
- Remove skin splashes by immediate washing with soap and water.

In order to carry out your full COSHH assessment, consult the SDS for all safety information. The most recent version of the SDS is available from [alphaassembly.com](http://alphaassembly.com).

### CONTACT INFORMATION

To confirm this is the most recent issue, please contact Alpha Assembly Solutions

[AlphaAssembly.com](http://AlphaAssembly.com)

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|---|---|---|
| <p><b>North America</b><br/>300 Atrium Drive<br/>Somerset, NJ 08873, USA<br/>800.367.5460</p> | <p><b>Europe</b><br/>Unit 2, Genesis Business Park<br/>Albert Drive<br/>Woking, Surrey, GU21 5RW, UK<br/>01483.758400</p> | <p><b>Asia</b><br/>8/F., Paul Y. Centre<br/>51 Hung To Road<br/>Kwun Tong, Kowloon, Hong Kong<br/>852.3190.3100</p> |
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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency directory assistance Chemtrec 1 - 800 - 424 - 9300.

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