

ALPHA[®] PV-68

No-Clean Tabbing and Stringing Flux

DESCRIPTION

ALPHA PV-68 is a zero rosin, zero halogen, no-clean flux specifically designed to meet the demanding requirements of the photovoltaic industry. This tabbing and stringing flux has a low solids formula employing a unique proprietary activator system which provides excellent soldering in standard module assembly processes; using widely used (preheat and soldering) methods for both spray on cell or spray on ribbon applications.

ALPHA PV-68 is an alcohol based, low pollution formulation delivering reliability in both lead free and SnPb applications. Additionally, it provides excellent solder joint cosmetics with uniform tack free residues providing low equipment maintenance.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- Extremely low solids level
- Minimal equipment maintenance and cleaning
- Fast wetting
- High reliability
- Defect-free soldering
- Can be applied by common spray or other methods

APPLICATION GUIDELINES

ALPHA PV-68 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-68 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 8.5 to 11.0.

TECHNICAL DATA

Item	Typical Values	Item	Typical Values
Appearance	Clear, colorless liquid	pH, (5% aqueous)	*2.7 to 4.0
Solids Content, wt/wt	1.36% (+/- 0.2)	Flash Point (T.C.C.)	12 °C
Specific Gravity @ 25 °C (77 °C)	*0.798 to 0.812	Shelf Life	360 Days
Acid Number (mg KOH/g)	*8.5 to 11.0	IPC J-STD-004B Designation	ORL0

*Note: Values are preliminary until specification limits have been established and finalized.

CORROSION & ELECTRICAL TESTING
Corrosion Testing

Test	Requirement	Results
Copper Mirror Tests IPC-TM 650 Test Method 2.6.15	No complete removal of copper	Pass
Copper Corrosion Test 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 ⁸ Ω	6.96 x 10 ¹¹ Ω
"Comb-Up" - Uncleaned	85 °C/85% RH, 7 days	> 1.0 x 10 ⁸ Ω	1.66 x 10 ¹³ Ω
IPC J-STD-004 - Control Boards	85 °C/85% RH, 7 days	> 1.0 x 10 ⁹ Ω	4.18 x 10 ¹² Ω

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

Bellcore Electromigration

Test	SIR (Initial)	SIR (Final)	Requirement	Result	Visual Result
"Comb-Up" Uncleaned	$1.07 \times 10^{12} \Omega$	$2.51 \times 10^{12} \Omega$	SIR(Intial) / SIR(Final) <10	Pass	Pass
"Comb-Down" Uncleaned	$1.35 \times 10^{13} \Omega$	$9.83 \times 10^{12} \Omega$	SIR(Intial) / SIR(Final) <10	Pass	Pass
Bellcore Test Condition (per GR 78-CORE, Issue1): 65 °C/85% RH/500 Hours/10V, measurement @ 100V/IPC B-25B Pattern (12.5 mil lines, 12.5 mil spacing). All values in ohms.					

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available at MacdermidAlpha.com/assembly-solutions/knowledge-base**

STORAGE

Flux is stable up to 360 days when stored in original unopened container at (6 to 43 °C).

CONTACT INFORMATION

**To confirm this document is the most recent version, please contact
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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 safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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