

# ALPHA® PV-50

## No-Clean Tabbing and Stringing Flux

### DESCRIPTION

ALPHA PV-50 Tabbing and Stringing flux is our lowest solids, alcohol based, zero-halogen, halide and rosin free formulation designed to provide the attributes of excellent solderability in module assembly processes where low temperature or no pre-heating is followed by a soldering step using standard heating methods. Delivers high reliability in both Pb-free and SnPb applications. Additionally, it provides outstanding solder joint cosmetics with a uniform, tack free residue and low equipment maintenance..

### FEATURES AND BENEFITS

- Very low solids produces high electrical reliability, low, tack-free, residues and minimal assembly equipment maintenance and cleaning
- Fast wetting
- Defect-free soldering
- Accurate in circuit testing
- Can be applied by spray or other application method

### APPLICATION

ALPHA PV-50 flux is engineered for most standard solar module assembly applications. Perfect for processes using no pre-heat or low temperature pre-heating along with standard temperature reflow, no special cooling or pre-bake 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-50 flux can be maintained by titration. Assistance in controlling the flux by this method can be obtained through our technical department.

### TECHNICAL SPECIFICATIONS

Physical Properties	Typical Values	Parameters/Test Method	Typical Values
Appearance	Colorless to light yellow liquid	pH, 5% v/v aqueous solution	2.8 - 4.2
Solids Content, wt/wt	1.36%	Recommended Thinner	ALPHA 425
Specific Gravity @ 25°C (77°C)	0.798 – 0.804	Shelf Life	12 months
Acid Number (mg KOH/g)	10.7 ± 1.1	IPC J-STD-004 Designation	ORL0
Flash Point (T.C.C.)	13°C		

### CORROSION AND ELECTRICAL TESTING

#### CORROSION TESTING

Test	Requirement for ORL0	Results
Silver Chromate Paper IPC-TM 650 Test Method 2.3.33	No detection of halide	Pass
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

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an Alent plc Company

ALPHA Global Headquarters  
300 Atrium Drive, Somerset, NJ 08873 USA • 1-800-367-5460 • www.alpha.alent.com

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## CORROSION AND ELECTRICAL TESTING

### J-STD-004B TM 2.6.3.7 SURFACE INSULATION RESISTANCE

Test	Requirements	Lowest Recorded Reading <sup>1</sup>	Day 7 Results <sup>2</sup>
"Comb-Down" Un-cleaned	$1.0 \times 10^{8\Omega}$ minimum	$2.5 \times 10^8 \Omega$	$2.2 \times 10^9 \Omega$
"Comb-Up" Un-cleaned	$1.0 \times 10^{8\Omega}$ minimum	$1.9 \times 10^9 \Omega$	$5.0 \times 10^{10} \Omega$
Control Boards	$2.0 \times 10^{8\Omega}$ minimum	$7.9 \times 10^8 \Omega$	$1.0 \times 10^{11} \Omega$

IPC Test Condition (per J-STD-004B / IPC-TM-650 Test Method 2.6.3.7): 40°C/90% RH, 12.5V bias, measurements taken every 20 minutes for 7 days, IPC B-24 board (0.4 mm lines, 0.5 mm spacing).

<sup>1</sup> – This is the lowest reading observed out of 4545 total readings recorded

<sup>2</sup> – This is the geometric mean of the 9 final readings recorded for the 3 coupons tested.

## HEALTH AND SAFETY

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 Material Safety Data Sheet (MSDS).