

ALPHA® PV-21

No-Clean Tabbing and Stringing Flux

DESCRIPTION

ALPHA PV-21 Tabbing and Stringing flux is an alcohol based, zero halogen, halide and rosin free formulation designed to provide the attributes of excellent solderability in a standard module assembly process using popular heating (pre-heat and soldering) methods. Delivers high reliability in both Pb-free and SnPb applications. Additionally, it provides outstanding solder joint cosmetics with a uniform, tack free residue.

FEATURES & BENEFITS

- Very low solids
- Fast wetting
- Tack-free residues
- Eliminates the need for cleaning
- Highly reliable
- Defect-free soldering
- Accurate pin testing
- Can be applied by spray or other applicator

APPLICATION

ALPHA PV-21 flux is engineered for most standard solar module assembly applications. Standard pre-heating and reflow temperature should be used with 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. Like all no-clean fluxes, no post process cleaning is needed.

ALPHA PV-21 flux can be maintained by titration. Assistance in controlling the flux by this method can be obtained through our technical department.

HALOGEN STATUS

Standard	Requirement	Test Method	Status
JEITA ET-7304A <i>Definition of Halogen free Soldering Materials</i>	<1000 ppm Br, Cl, F, I in solder material solids	TM EN 14582 <i>Solids extraction per IPC TM 2.3.34</i>	PASS
IEC 61249	Post soldering residues contain <900ppm each or total of <1500ppm Br or Cl from flame retardant source		PASS
JEDEC <i>A Guideline for Defining "Low Halogen" Electronic Products</i>	Post soldering residues contain <1000ppm Br or Cl from flame retardant source		PASS
Zero Halogens - No halogenated compounds have been intentionally added to this product			

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TECHNICAL DATA

Appearance:	Clear, Colorless liquid
Solids Content, wt/wt:	2.1%
Specific Gravity @ 20°C:	0.804 ± .005
Acid Number (mg KOH/g):	16.5 ± 1.0
Flash Point (T.C.C.):	16°C
Recommended Alpha Thinner:	425 Thinners
Shelf Life:	12 Months

CORROSION & ELECTRICAL TESTING

<u>Test</u>	<u>Requirement</u>	<u>Results</u>
IPC/Bellcore Copper Mirror Test	No complete removal of copper	Pass
Halide-silver chromate paper method	No detection of halide	Pass
IPC-SF-818 10-day Copper Corrosion Test	No evidence of corrosion	Pass

SURFACE INSULATION RESISTANCE (All Values in Ohms)

<u>Method</u>	<u>Conditions</u>	<u>Requirement</u>	<u>Results</u>
IPC JStd-004 TM 2.6.3.3 Class 3, Not Cleaned	85°C/85% RH 7 Days	1.0x10 ⁸ min.	>1.0x10 ¹⁰

Alpha PV-21 is designated as ORLO under J-STD-004

SAFETY

Consult the SDS for safety information. The most recent version of the SDS is available from alphaassembly.com. Inhalation of the volatilized flux activator fumes, which are generated at soldering temperatures, may cause headaches, dizziness, and nausea

Suitable fume extraction equipment should be used to remove the flux from the work area. An exhaust at the exit end of the wave solder machine may also be needed to completely capture fumes. Observe precautions during handling and use. Suitable protective clothing should be worn to prevent the material from coming in contact with skin and eyes.

STORAGE

The minimum shelf life information is valid for Alpha products in factory-sealed containers stored in temperatures of 50°F - 110°F (10°C - 43°C). Prolonged exposure to temperatures outside this range may

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result in separation of ingredients. Containers of this material should also be protected from exposure to direct sunlight and precipitation which may cause container failure over time.

Please contact your Alpha representative if you have questions or concerns about the performance of this product as a result of improper handling or storage.

CONTACT INFORMATION

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

AlphaAssembly.com

<p>North America 300 Atrium Drive Somerset, NJ 08873, USA 800.367.5460</p>	<p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 01483.758400</p>	<p>Asia 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 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.

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. No statement or recommendation shall constitute a representation unless set forth in an agreement signed by officers of seller and manufacturer. NO WARRANTY OR MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE. The following warranty is made in lieu of such warranties and all other warranties, express, implied, or statutory. Products are warranted to be free from defects in material and workmanship at the time sold. The sole obligation of seller and manufacturer under this warranty shall be to replace any product defective at the time sold. Under no circumstances shall manufacturer or seller be liable for any loss, damage or expense, direct or consequential, arising out of the inability to use the product. Notwithstanding the foregoing, if products are supplied in response to a customer request that specifies operating parameters beyond those stated above, or if products are used under conditions exceeding said parameters, the customer by acceptance or use thereof assumes all risk of product failure and of all direct, indirect and consequential damages that may result from use of the products under conditions, and agrees to exonerate, indemnify and hold harmless MacDermid Incorporated therefrom. No suggestion for product use nor anything contained herein shall be construed as a recommendation to use any product in infringement of any patent rights, and seller and manufacturer assume no responsibility or liability for any such infringement.

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