

ALPHA[®] PV-65

No Clean Tabling & Stringing Flux

DESCRIPTION

ALPHA PV-65 is an active, low solid, no-clean flux designed to meet the demanding requirements of the Photovoltaic industry when high reliability & good peel strength is deemed necessary. It is formulated with a proprietary mixture of organic activators which provides excellent soldering in standard module assembly processes and methods that are widely used (preheat and soldering). **ALPHA PV-65** provides excellent solder joint cosmetics with very low levels of non-tacky residues left after soldering.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Applicable to Standard and Multi-Busbar solar module assembly applications
- Very Low Level of Tack-Free residues
- Good Peel Strength
- Belcore Compliant for long term Electrical Reliability
- Applicable for both Spray or Dipping application methods
- Eliminates the need for cleaning

APPLICATION GUIDELINES

ALPHA PV-65 flux is engineered for use in most standard and multi-busbar assembly applications, such non-contact high speed soldering systems including manual contact soldering. Care should be taken to ensure flux is applied only to those areas being soldered in order to avoid overspray. This is a no-clean flux, no cleaning is required.

ALPHA PV-65 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 17.0 to 19.0 mg KOH/g.

TECHNICAL DATA

Item	Typical Values	Item	Typical Values
Appearance	Clear, colorless liquid	Flash Point (T.C.C.)	12 °C
Solids Content (wt/wt%)	2.3	Recommended Thinner	ALPHA 425
Specific Gravity @ 25 °C	0.801 ± 0.003	Bellcore TR-NWT-000078, Issue 3 compliant	Yes
Acid Number (mg KOH/g)	18.0 +/-1.0	IPC J-STD-004 Designation	ORL0
pH, 5% aqueous solution	3.36 +/- 0.30	Shelf Life (from Date of Mfg.)	1 Year

CORROSION & ELECTRICAL TESTING
Corrosion Test

Test		Requirement for ROL0	Results
IPC	Silver Chromate Paper IPC-TM 650 Test Method 2.3.33	No detection of halide	PASS
	Copper Mirror Test IPC-TM 650 Test Method 2.3.32	No complete removal of copper	PASS
	Copper Corrosion Test IPC-TM650 Test Method 2.6.15	No evidence of corrosion	PASS

IPC-J-STD-004A Surface Insulation Resistance (All values shown are in ohms)

Test	Conditions	Requirements	Results
“Comb down” – Uncleaned	85 °C/85% RH, 7 days	> 1.0 x 10 ⁸	2.1 x 10 ⁹
“Comb up” – Uncleaned	85 °C/85% RH, 7 days	> 1.0 x 10 ⁸	1.5 x 10 ⁹
Control Board	85 °C/85% RH, 7 days	>1.0 x 10 ⁹	1.1 x 10 ¹⁰
IPC Test Condition (per J-STD-004A): --50V, measurement @ 100V/IPC B-24 board (0.4 mm lines, 0.5 mm spacing).			

Bellcore Surface Insulation Resistance (All values shown are in ohms)

Test Condition	Requirements	Results
Bellcore "Comb-Down" – uncleaned	$> 1.0 \times 10^{11}$	4.5×10^{11}
Bellcore "Comb-Up" – Uncleaned	$> 1.0 \times 10^{11}$	1.4×10^{11}
Bellcore Control Board	$> 2.0 \times 10^{11}$	9.3×10^{11}
Bellcore Test Condition (per TR NWT-000078, Issue 3): 48 Volts, measurement @ 100V/25 mil lines/50 mil spacing.		

RECYCLING SERVICES

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area or [link here](#).



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.**

CONTACT INFORMATION

To confirm this document is the most recent version, please contact
Assembly@MacDermidAlpha.com
www.macdermidalpha.com

<p>North America 109 Corporate Blvd. South Plainfield, NJ 07080, USA 1.800.367.5460</p>	<p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400</p>	<p>Asia 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100</p>
---	--	---

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

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 OF MERCHANTABILITY, WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY 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 noncompliant product at the time sold. Under no circumstances shall manufacturer or seller be liable for any loss, damage or expense, direct, indirect, incidental 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, incidental and consequential damages that may result from use of the products under such conditions, and agrees to exonerate, indemnify, defend and hold harmless MacDermid, Incorporated and its affiliates therefrom. No suggestion for product use nor anything contained herein shall be construed as a recommendation to use any product in a manner that infringes any patent or other intellectual property rights, and seller and manufacturer assume no responsibility or liability for any such infringement.

© 2019 MacDermid, Inc. and its group of companies. All rights reserved. “(R)” and “TM” are registered trademarks or trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.