

# ALPHA<sup>®</sup> PV-38 Paste Flux

High Activity, Low Residue Liquid Soldering Flux for PV Assembly

## DESCRIPTION

**ALPHA PV-38** liquid soldering flux is an alcohol based, low solids, zero halogen and halide free formulation designed specifically for use with tabbing and stringing equipment that applies liquid flux directly to the interconnecting ribbon. These systems may have ribbon drying and pre-heating zones and use a variety of soldering methods that apply heat directly (i.e., high temperature soldering tips) or indirectly (i.e., IR, hot air, induction, etc...) to the ribbon and cell. **ALPHA PV-38** uses a unique activation package to deliver fast wetting in high throughput environments, as well as outstanding solder joint cosmetics with uniform, tack free residues that are compatible with popular encapsulants (i.e., EVA). **ALPHA PV-38** has a wide operating temperature range and can be used with all popular SnPb and Pb-free solder alloys.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

## FEATURES & BENEFITS

### Features

- High activity
- Low solids
- No-clean
- Low surface tension solution
- Zero halogen
- Halide free

### Benefits

- Wets quickly allowing fast production throughput
- Produces highly reliable ribbon to cell interconnects that pass all required certification tests
- Can be applied using all the most popular methods including spraying and dipping
- Leaves uniform, tack free and transparent residues for excellent cosmetics
- Compatible with the most popular encapsulants (i.e., EVA)
- Good for the environment as it complies with all current halogen-free industry standards

**APPLICATION GUIDELINES**

ALPHA PV-38 flux is engineered for high performance in automated tabbing and stringing applications that apply liquid flux directly on the interconnect ribbon. Standard pre-heating and reflow temperature can be used with no special cooling or pre-bake required.

Care should be taken to ensure sufficient flux is applied to uniformly coat the ribbon but not saturate it to the point where the flux doesn't dry properly and contaminates various areas of the ribbon handling equipment. There are various methods for confirming that the proper amount of flux is being applied. Consult with your local Alpha Customer Technical Service Representative for more information. If an open air dip tank is used ALPHA PV-38 flux can be maintained by titration. Assistance in controlling the flux by this method can be obtained through our Customer Technical Services (CTS) organization.

**Residue Removal:** ALPHA PV-38 is a no-clean flux, and the residues are designed to be left in place. If desired, flux residues can be removed with hot water or ALPHA 2110 saponifier cleaner and with other commercially available saponifier cleaners.

**HALOGEN STATUS**

Halogen Standards			
Standard	Requirement	Test Method	Status
<b>JEITA ET-7304</b> Definition of Halogen Free Soldering Materials	<1000 ppm BR, Cl, F in Solder material solids	<b>TM EN 14582</b> Solids extraction per IPC TM 2.3.34	PASS
<b>IEC 61249-2-21</b>	Post soldering residues contain <900ppm each of total of <1500ppm BR or Cl from flame retardant source		PASS
<b>JEDEC</b> A guide for defining "Low Halogen" electronic products	Post soldering residues contain <1000ppm Br or Cl from flame retardant source		PASS

**TECHNICAL DATA**

Item	Typical Values	Item	Typical Values
Appearance	Clear, Colorless liquid	Flash Point (T.C.C)	12 °C
Solids Content, wt/wt	1.8%	Recommended Thinner	ALPHA 425
Specific Gravity @ 25 °C (77 °F)	0.792	Shelf Life	12 months
Acid Number (mg KOH/g)	14	IPC J-STD-004(B) Designation	ORL0

**CORROSION & HALIDE TESTING**

Test		Requirement for ROL)	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-TM 650 Test Method 2.6.15	No evidence of corrosion	PASS

**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](http://MacDermidAlpha.com/assembly-solutions/knowledge-base).**

**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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