

ALPHA® PV-38

HIGH ACTIVITY, LOW RESIDUE LIQUID SOLDERING FLUX FOR PV MODULE 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.

FEATURES & BENEFITS

Features

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

Benefits

- ALPHA® PV-38 wets quickly allowing fast production throughput
- ALPHA® PV-38 produces highly reliable ribbon to cell interconnects that pass all required certification tests
- ALPHA® PV-38 can be applied using all the most popular methods including spraying and dipping
- ALPHA® PV-38 leaves uniform, tack free and transparent residues for excellent cosmetics
- ALPHA® PV-38 is compatible with the most popular encapsulants (i.e. EVA)
- ALPHA® PV-38 is 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.

HEALTH & SAFETY

Observe standard 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).

TECHNICAL SPECIFICATIONS

Physical Properties	Typical Values	Parameters/Test Method	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

HALOGEN CLASS

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

CORROSION AND HALIDE TESTING

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

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