

## LIQUID FLUX WF131

VOC-free and No-Clean

### DESCRIPTION

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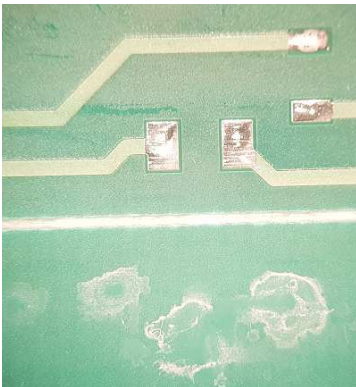
Stannol WF131 is a water-based, halide-free and low-solid flux, developed for the use in industrial electronics manufacturing. It helps to reduce emissions of volatile organic compounds (VOC) by replacing IPA with water as solvent.

### CHARACTERISTICS

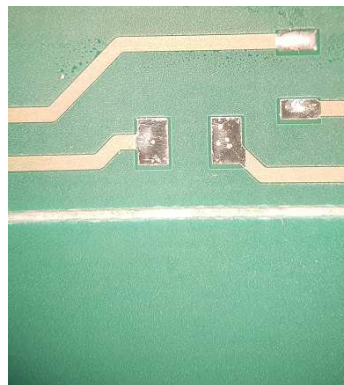
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Stannol liquid flux WF131 offers the following advantages:

- Very low amounts of non-crystalline residues
- No-Clean formulation
- Leaves electrical safe residues - no removal of residues required
- For all available lead-free alloys / solders
- Application with spray fluxer
- Non-flammable formulation – VOC FREE
- Ensures a good wetting on surfaces and in through holes



Conventional Flux



WF131

Optical appearance of dried flux residues with high flux volume applied

### RECOMMENDED OPERATING CONDITIONS

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**Printed Circuit Board:** Stannol WF131 has been formulated for good activity on most commonly used surface preservative materials (OSP, HAL, Ni/Au, chem. Sn and chem. Ag). The flux ensures a good filling of the through holes in THT.

**Machine Preparation:** Before changing over to using WF131 please ensure the solder equipment is thoroughly cleaned, including all fingers, pallets and conveyors, so that any possible contamination has been removed. Stannol Flux-Ex 200B can be used in the finger cleaners.

**Fluxing:** Stannol WF131 has been formulated for use in spray fluxing equipment only.

**Flux Control:** As the flux Stannol WF131 has been designed to be applied by closed spray fluxing units only, there is no change in density and/or acid value. In special cases a control of the acid value and addition of deionized water can be done using the Stannol Mini-Titration-Kit (flux concentration test kit).

Note: The flux should not be stored below +10°C (long-time-storage). For a short time storage temperatures of +5°C might be acceptable without risks of flux degradation. Lower temperatures may cause the solids to crystallize and form a solid layer inside the container. If this happened, you can try to get the solids back into solution by consistently stirring and heating it to room temperature.

Preheating: As Stannol WF131 is based on water, it is necessary to adjust the preheat settings to ensure the water is sufficiently evaporated prior to the PCB entering the solder wave. A minimum temperature according to the below listed chart ensures, the flux can react properly by removing oxides (see topside pre-heat table below). The optimum preheat temperature for a PCB depends on its design and the thermal mass of the components used, but the preheat temperature and time should be set properly to ensure that the solder side of the PCB is not visibly wet when it hits the liquid tin of the wave.

Wave Soldering: Excess moisture on the PCB during soldering may lead to random solder balling and poor wetting of some solder joints. IT IS IMPORTANT that the flux solvent carrier (water) is fully evaporated and that the PCB appears virtually dry when it reaches the solder wave. At a speed of 1.20-1.50m/min, a contact time of approx. 1.5-3 sec is recommended. Longer contact times may be required on some products, but can produce dull solder joints. For accurate preheat and peak temperature measurements when setting up a wave solder machine, and consistent process monitoring we recommend to use the Stannol Thermologger 5000 temperature profile system.

Selective Soldering:

## PHYSICAL PROPERTIES AND DATA

GENERAL PROPERTIES	WF131
Colour	clear, colourless liquid
Solid content	2.6%
Halide content	Zero
Acid value (on liquid)	22 mg KOH/g
Specific density at 20°C	1.005 g/cm <sup>3</sup>
Recommended thinner	no thinner required
J-STD-004 classification	OR L0
SIR-Test	>10 <sup>08</sup> Ohm
Copper mirror	Pass L0
Copper corrosion	Pass L0

## SHELF LIFE

1 year after date of production (provided proper storage in originally sealed container).

## HEALTH AND SAFETY

Before using please read the material safety data sheet carefully and observe the safety precautions described.

## NOTICE

The above values are typical and represent no form of specification. The Data Sheet serves for information purposes. Any verbal or written advise is not binding for the company, whether such information originates from the company offices or from a sales representative. This is also in respect of any protection rights of third parties, and does not release the customer from the responsibility of verifying the products of the company for suitability of use for the intended process or purpose. Should any liability on the part of the company arise, the company will only indemnify for loss or damage to the same extent as for defects in quality.