TECHNICAL DATA SHEET

CATEGORY: **VOC-FREE LIQUID FLUX**
NAME: **WS770-S / WS770-F**

FEATURES

- HIGH ACTIVITY LEVEL
- IMPROVED CLEANING
- CAN BE FOAMED, SPRAYED, BRUSHED, OR DIPPED
- EXCELLENT WETTING
- WIDE PROCESS WINDOW
- FOAM RESISTANT RESIDUES

* Passes IPC, product testing results available upon request

DESCRIPTION

WS770 is a PH neutral, organically activated, water-based, VOC-free water-soluble liquid flux formulated to fully atomize during the wave soldering process. WS770 may be applied by automated flux sprayers, foamed, dipped, or brushed on with favorable results. WS770 is a buffered flux that has a wide activation range and good wetting characteristics that produce bright shiny solder joints. WS770 performs well with bare copper, solder-coated, and organic coated PWBs.

PHYSICAL PROPERTIES

SOLIDS CONTENT	FLUX DENSITY	ACID VALUE
< 9%	1.02 ± .02	31.2 MG KOH/GRAM FLUX ± .5

HANDLING

- WS770 has an unopened shelf life of 6 months when stored at room temperature.
- Do not store near fire or flame. Keep away from sunlight as it may degrade product.
- WS770 is shipped ready-to-use, no mixing is necessary.
- Do not mix used and unused chemical in the same container. Reseal any opened containers.

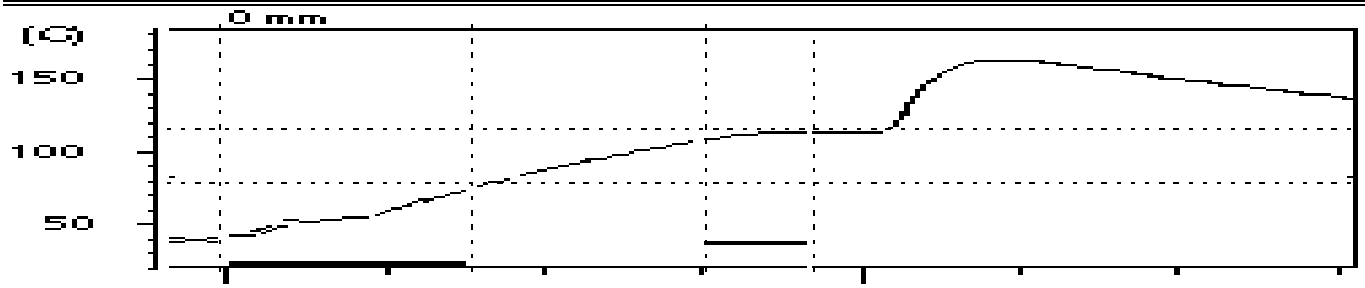
FLUX APPLICATION

- WS770-S is ready to use directly from the container for spay systems. No thinning is required. It may be brushed or dipped as well. When spray fluxing, it is imperative that proper flux coverage and uniformity be achieved and maintained. A dry flux coating of 500 to 1500 micrograms per square inch is recommended as a starting point.
- WS770-F is available for foaming applications.
- When complete nitrogen sealed wave solder equipment is used, it is generally necessary to apply slightly more flux than normal as a result of excess drying due to the extended length of the equipment.
- When foaming, air stones should be supplied with compressed air free of oil and moisture. Adjust foam head to achieve a uniform distribution of small bubbles for optimum flux coverage.
- During foaming applications it is periodically necessary to add water to replace that which is lost through evaporation. DI water is recommended.

PROCESS CONTROL

Specific gravity should be monitored and controlled either with automated equipment or manually with a hydrometer. Specific gravity should be maintained at 1.02 ± .01 for optimum performance. Dump and refill flux pot with fresh flux at least once per week when used daily. For spray flux applications, ensure proper coverage of PWB is maintained.

THERMAL PROFILE



RATE of RISE	PCB TOP SIDE TEMP	COOLDOWN
2-3 ºC / SEC MAX	**102°C - 113°C (215ºF - 225ºF)**	**£ 4ºC**
	JUST BEFORE WAVE	

NOTE:

BOTTOM SIDE TEMPERATURE SHOULD BE BETWEEN 250° - 310°F, (121° - 154°C)

FLUX TECH-TIPS

PROBLEM	POTENTIAL CAUSE
BRIDGING:	INSUFFICIENT FLUX, EXCESSIVE PRE-HEAT, EXCESS CONVEYOR SPEED, SOLDER CONTAMINATION
SOLDER BALLS:	LOW PREHEAT TEMPERATURE, EXCESS FLUX
WHITE RESIDUE:	EXCESS FLUX, FLUX CONTAMINATION, SOLDER CONTAMINATION
DISCOLORED JOINT:	SOLDER OXIDATION, BOARD/COMPONENT CONTAMINATION, EXCESSIVE HEAT

CLEANING

WS770 can be cleaned in normal tap water; however, deionized water is recommended for the final rinse. A temperature of 100° - 150ºF is sufficient for removing any residues. An in-line or other pressurized spray cleaning system is suggested, but is not required.

SAFETY

- Use with adequate ventilation and proper personal protective equipment.
- Refer to the accompanying **M**aterial **S**afety **D**ata **S**heet for any specific emergency information.
- Do not dispose of any hazardous materials in non-approved containers.

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