SUPERIOR No. 420F-LF

LEAD-FREE, VOC-FREE, NO-CLEAN FLUX

- Lead-Free, VOC-Free, water-based formulation.
- Excellent wetting and compatibility with Immersion Silver, Gold, and/or Tin; HASL, Palladium-plated or OSP PCBs.
- No residue formulation eliminates post-solder cleaning of boards.
- Increased activity level to meet flow and melt-points of different Lead-Free solders.
- Conforms to IPC ANSI-J-STD-004, Type ORL0.

DESCRIPTION

Superior No. 420-F LF Lead-Free, VOC-Free, No-Clean flux is a halide-free, rosin-free, no-residue flux specifically developed wave soldering applications for surface mount, mixed technology, and through-hole electronics assembly. ***Superior No. 420-F LF*** is a water-based, non-flammable formulation that eliminates the need for special storage requirements, while dramatically reducing VOC emissions from plants engaged in wave soldering.

PROCESS RECOMMENDATIONS

WAVE SOLDERING

Superior No. 420-F LF Lead-Free, VOC-Free, No-Clean flux is formulated for fluxing application in a wave soldering system. The following items are critical when setting the conveyor speeds for VOC-Free fluxes:

❶ Conveyor speed and preheat settings should be adjusted to ensure complete water removal from the PCBs before contact is made with the solder wave.

❷ In most machines, a conveyor speed of 4-6 ft/minute is acceptable, where the preheat section is a 4 ft. minimum. However, conveyor settings must be established by operators to meet the process needs of PCBs requiring special attention.

The following procedures are recommended for optimum performance.

❶ Make certain that the PCB surfaces are free of any oil, grease, or other impurities.
❷ Maintain a consistent foam head by narrowing the flux chimney, or using dual flux stones.
❸ Add fresh flux to maintain proper flux level in flux tank.
❹ Replace the flux daily unless a sealed, self-contained system is used.
❺ Regularly clean the fluxing equipment. Never leave foaming stone in flux when pressure is not applied.
❻ Clean fluxing stone in ***Superior No. 95T*** flux thinner.
❼ When foam fluxing, flux properties can be maintained by monitoring the specific gravity. However, control by checking the acid value is recommended as the most accurate measure. Titration kits are available from Superior Flux.
❽ Add De-Ionized or Distilled water as a flux thinner when needed.

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SAFETY AND HANDLING PRECAUTIONS

Superior No. 420-F LF Lead-Free, VOC-Free, No-Clean is a non-flammable, non-hazardous product. However, it is recommended that standard chemical safety practices be observed when handling this product. Avoid contact with eyes, skin, and mucous membranes. The use of rubber gloves, goggles and, or face shield is recommended. Use with adequate ventilation. Refer to the Material Safety Data Sheet (MSDS) for additional information. ***Superior No. 420-F LF*** has a two (2) year shelf life.

Superior No. 420-F LF Lead-Free, VOC-Free, No-Clean flux should be stored in plastic containers away from heat. In the event the flux is exposed to temperatures below 0°C/32°F, the flux may freeze. Freezing will not degrade this product if these steps are followed:

❶ Thaw flux until room temperature is reached
❷ Agitate flux to return to proper consistency.

PHYSICAL PROPERTIES

Specific Gravity	1.015 ± 0.01 @ 20-25°C/68-77°F
Pounds/Gallon	8.465 ± 0.20 @ 20-25°C/68-77°F
Acid Number	38.0 ± 4.0
Total Solids	4.0 ± 0.2
Flash Point	None
Silver Chromate Paper Test	Passes
*Copper Mirror Test	Passes
Free/Thaw Test	Passes

THIS PRODUCT IS RoHS COMPLIANT.

** Modified IPC Test Method: Passes copper mirror test when same flux is formulated with isopropyl alcohol as the solids from water-based formulation are reconstituted with alcohol.*

Superior manufactures quality fluxes. Our business is solving problems.

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