MetaFlux™ NC-810LF Product Bulletin

Alcohol Based No-Clean Flux

Metallic Resources' MetaFlux NC-810LF is an isopropyl alcohol based low solids content no-clean soldering flux specially formulated for lead free wave soldering applications where post-solder cleaning can be eliminated. It is halide-free, and contains only non-halide activators. MetaFlux NC-810LF successfully replaces rosin-based fluxes, and it does not contain any rosin or resins. It is available in 1-gal. containers, 5-gal. pails, and 55-gal. drums.

Designed for Foam Fluxing

MetaFlux NC-810LF is specially designed for wave soldering applications where elimination of post-cleaning is desired. It is successfully used in foam, spray, and drag fluxing soldering processes.

Benign Residues

MetaFlux NC-810LF has a low solids content in addition to being halide-free, which allows the product to leave only negligible traces of benign residues. It promotes excellent solderability and leaves shiny solder joints. The flux does not spatter when coming into contact with molten solder.

Application Directions

MetaFlux NC-810LF is formulated for foam fluxing applications as supplied. Specific gravity should be monitored. Add 810-T thinner if specific gravity increases beyond the desired level. Monitor by titration. The low residue flux solids are designed to be removed by the solder bath during soldering operations. When cleaning is necessary, hot de-ionized water (140˚F or 60˚C) completely removes remaining residue. A topside board temperature of 180-220˚F (82-104˚C) is recommended for best results. Solder as quickly as possible after fluxing.

Physical Properties

Form	Clear liquid
Color	Colorless
Specific Gravity	0.810 +/- 0.005 @ 68˚F (20˚C)
Density	6.93 lbs./gal.
Solids Content	4.0 - 5.0%
Flash Point	60˚F (15.5˚C)
Boiling Point	173˚F (78.3˚C)
Freezing Effects	None
Discoloration	None
Chloride/Halide Content	None
Acid Number	40 - 50
Optimum Soldering Range	390-500˚F (or 200-260˚C)
Flux Classification	ORL0 (J-STD-004)
SIR (J-STD-004)	2.13×10^{13} ohms (Pattern up IPC-TM-650 2.6.3.3) 4.2×10^{14} ohms (Pattern down IPC-TM-650 2.6.3.3)

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Safety Precautions

MetaFlux NC-810LF is flammable and should be stored in plastic containers away from heat, sparks, open flame, and other sources of ignition. Use adequate ventilation to remove fumes. Avoid contact with eyes and skin. Do not inhale vapors or fumes. Keep away from children. Dispose of in accordance with all applicable regulations. This product has a two (2) year shelf life. Refer to the Material Safety Data Sheet (MSDS) for additional information.

Standards Met

IPC ANSI J-STD-004, Type ORL0

IPC J-STD-004 Specification Test Results

Metallic Resources' MetaFlux NC-810LF meets IPC J-STD-004, Type ORL0 classification.

Copper Mirror Test

The test method is designed to determine the removal effect the flux has on a copper mirror. (IPC-TM-650, 2.3.32)

Result: No Breakthrough
Rating Category: L

Presence of Halides (Silver Chromate Method)

The test method is designed to determine the presence of chlorides and bromides in solder flux (IPC-TM-650, 2.3.33)

Result: Passes

Fluoride Spot Test

This test method is designed to determine the presence of fluorides in soldering flux. (IPC-TM-650, 2.3.35.1)

Result: Passes

Halide Content

This test method is designed to determine the halide content of fluxes attributable to chlorides, bromides, and fluorides. The halide content is reported as the weight percentage of halide to the solid portion of the flux. (IPC-TM-650, 2.3.35 or 2.3.28 and 2.3.35.2 or 2.3.28)

Result: Passes (No chlorides or bromides present (0%).
Result: Passes No fluorides present (0%)

Solids Content

This test method is designed to determine the residual solids content of the liquid flux after evaporation of the volatile chemicals. (IPC-TM-650, 2.3.34)

Result: 4.5%

Corrosion Test

This test method is designed to subjectively determine the corrosive properties of the flux residue under extreme environmental conditions. (IPC-TM-650, 2.6.15)

Result: Moderate Corrosion.