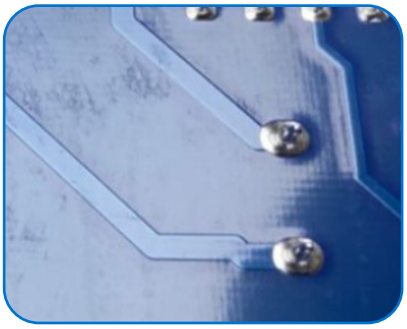
ALPHA® EF-6038HF

Ultra-Low Residue, Halogen-Free, No-Clean Wave Soldering Flux

ALPHA EF-6038HF is an ultra-low residue, halogen-free, alcohol-based liquid flux developed for standard to moderately complex PCB assemblies where process margin and repeatability are critical. A broad operating window, combined with thermal and oxidative stability, helps maintain consistent wave soldering performance as line conditions vary.

This rosin-free formulation delivers high reliability performance and high hole fill while leaving virtually no residue, directly reducing post-solder process risk and supporting strong pin-test performance without additional cleaning. Predictable through-hole results reduce downstream variability, preserving control across production.

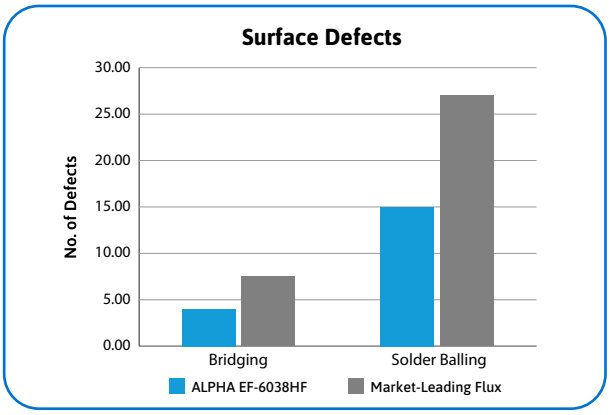
ALPHA EF-6038HF
Minimal, non-tacky residue supporting reliable pin testing

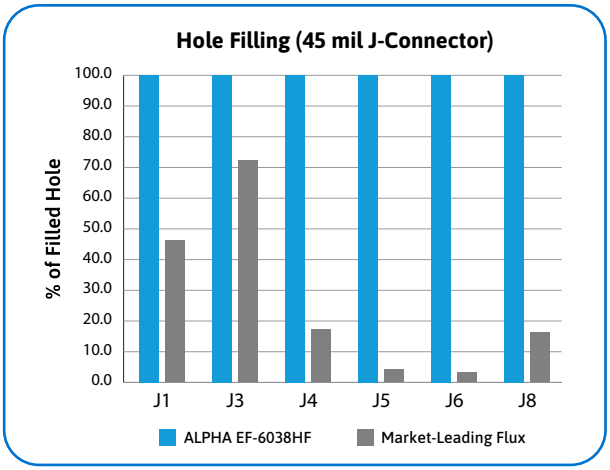


Conventional Low Solids Flux

Key Features

- **Ultra-low, non-tacky residue** delivers excellent cosmetic appearance and minimal interference with pin testing
- **Wide process window** enables flexible application across a range of assembly conditions
- **Excellent hole fill** improves electrical reliability and mechanical strength
- **Thermally stable activators** reduce soldering defects and support consistent soldering results
- **IPC J-STD-004 A/B compliant SIR** performance supports long-term electrical reliability of finished assemblies
- **Halogen-free formulation** supports high-reliability assembly and environmentally responsible processing





MacDermid Alpha ELECTRONICS SOLUTIONS

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Technical Specifications

Item	Specification
Solid Content (wt%)	3.4%
Specific Gravity	0.815 to 0.855
Acid Number (mg KOH/g flux)	29 (Typical)
Halogen-free	Yes
IPC Flux Designation	ORL0 per J-STD 004 ORM0 per J-STD 004B

Halogen Class

Standard	Requirement	Test Method	Status
IEC 61249-2-21	Post soldering residues contain <900 ppm each or total of <1500 ppm Br or Cl from flame-retardant source	TM EN 14582 Solids extraction per IPC TM 2.3.34	Pass
JEDEC *A guideline for defining "low halogen" electronic products*	Post soldering residues contain <1000 ppm Br or Cl from flame-retardant source		Pass

Processing Parameters

Operating Parameters	Recommendation
Flux Application	Spray
Soldering Method	Wave Soldering
Top-side Preheat Temperature	105 to 130 °C (221 to 266 °F)
Bottom-side Preheat Temperature	0 to 25 °C (0 to 45 °F) greater than top-side
Soldering Temperature	260 to 280 °C (500 to 536 °F)
Contact Time	2 to 7.5s (3 to 5s most common)

These guidelines have been proven to yield excellent results; however, optimal settings will vary based on equipment, components, and circuit board design. Process optimization is best achieved through controlled experimentation of key variables, including flux application volume, conveyor speed, top-side preheat temperature, solder pot temperature, and board orientation.

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