QUALITEK® 813 WATER SOLUBLE HALOGEN-FREE FLUX

CORPORATE HEADQUARTERS USA: 315 Fairbank St. Addison, IL • 630-628-8083 • FAX 630-628-6543
EUROPE UK: Unit 9 Apex Ct. Bassendale Rd. Bromborough, Wirral CH62 3RE • 44 151 334 0888 • FAX 44 151 346 1408
ASIA-PACIFIC HEADQUARTERS SINGAPORE: 6 Tuas South St. 5 Singapore 637790 • 65 6795 7757 • FAX 65 6795 7767
PHILIPPINES: Phase 1 Qualitek Ave. Mariveles, Bataan Philippines C-2106 • 6347 935 4163 • FAX 63475613717
CHINA: 3B/F, YiPa Print Bldg. 351 # JiHua Rd., Buji Shenzhen, China 518112 • 86 755 28522814 • FAX 86 755 28522787

Description

Qualitek® 813 is a Halogen-Free Water Soluble Flux designed for wave soldering and surface mount assembly applications. 813 flux is best for foaming applications by providing a stable head of light bubbles. 813 may also be used for lead tinning.

Main Features

- Excellent foaming properties
- Halogen-Free
- Excellent for lead tinning
- Remains active at high temperatures

Technical Data

	Specification	Test Method
Flux Classification	ORM0	IPC-J-STD-004B
Color and Appearance	Light Amber Liquid	
Copper Mirror	Partial removal of copper film	IPC-TM-650 2.3.32
Specific Gravity (g/cm^3)	0.870 ± 0.006	
Solids Content, % Wt.	17.5 ± 0.5	IPC-TM-650 2.3.34

Applications

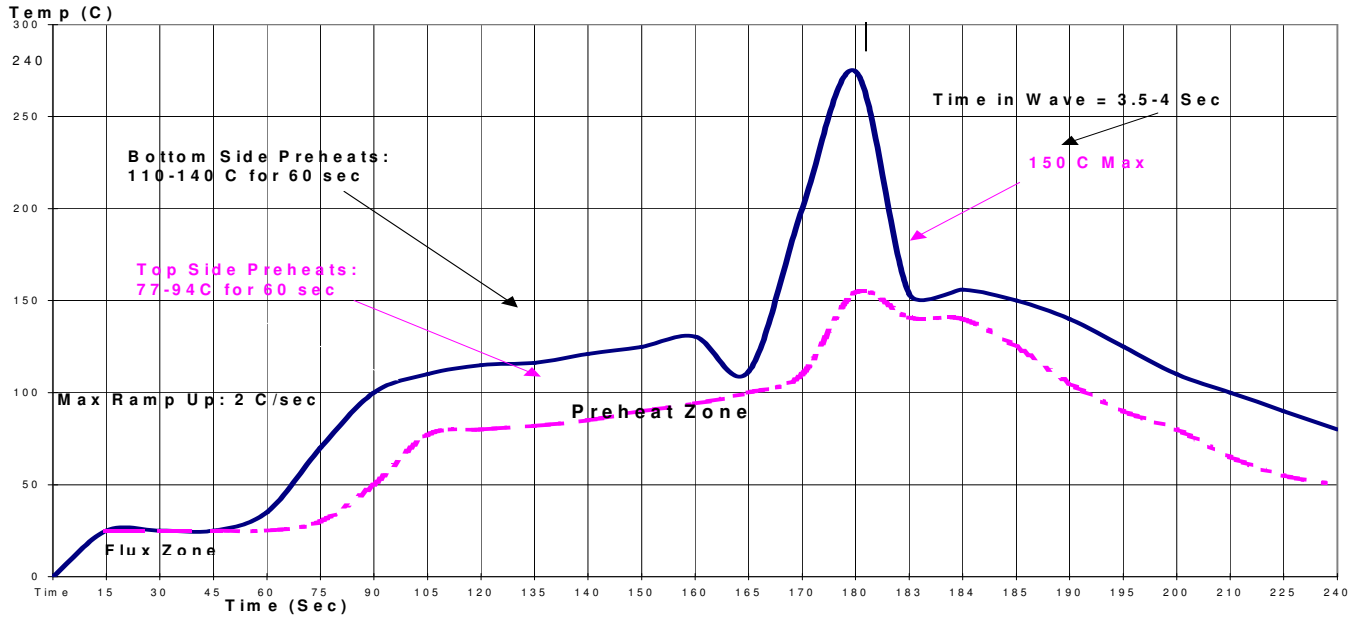
Flux Application

For mass wave soldering of OSP and plated circuit boards, spray, foam or wave fluxing can be utilized to apply this flux. If foam fluxing, the foam fluxer should be supplied with compressed air, which is free of oil and water. The flux tank should be full at all times. The surface of the flux should be 1-½ inches above the top of the flux aerator, or flux stone. Pressure should then be adjusted to produce the optimum foam height with a fine uniform foam head. After fluxing, an air knife should be used to remove excessive flux from the assembly.

Uniformity of the spray flux coating can be visually checked by running a tempered glass plate (usually supplied by machine manufacturer) through the spray and preheat sections, and inspected before going across the wave.

OPERATING PARAMETERS	TYPICAL LEVEL
Amount of flux	Foam, Wave: 1000-2000 µg/in^2 solids Spray: 750-1500 µg/in^2 solids
Foam Fluxing Parameters	
Foam Stone Pore Size	20-50 µm
Flux Level Above Stone	1-1 ½ inches (25-40mm)
Chimney Opening	3/8-1/2 inch (10-13 mm)
Air Pressure	1-2 psi
Top Side Preheat Temperature	190-230 °F (85-110 °C)
Bottom Side Preheat Temperature	65 °F (35 °C) higher than topside
Conveyor Speed	4-6 feet/minute(1.2-1.8 meters/minute)
Contact Time in the Solder (including Chip & Lambda)	2.5-4.5 seconds
Solder Pot Temperature	
Sn63/Pb37	491-500 °F (255-260 °C)

TYPICAL Leaded Wave Solder Profile (Sn63/Pb37)



Process Control

Control of flux during use is necessary to assure a consistent amount of flux is applied to assemblies. Monitoring and controlling specific gravity is recommended for maintaining the proper flux concentration. Density (specific gravity) can performed using a hydrometer. Control of the flux can be achieved with 800T thinner to maintain fluxing activity.

Over time debris and contaminants may accumulate in the flux reservoir. Therefore, periodically replacing the flux and cleaning the reservoir is recommended for consistent performance and minimizing debris build-up.

Flux Residues and Cleaning

As with all water-soluble fluxes, post-soldering cleaning is required. Residues can be easily removed with both hot and cold water; therefore, no neutralizer is needed. We recommend de-ionized water be used in the final rinse. Spray pressures should be maintained at 20-30 psi and conveyor speed of 3-6 ft. /min.

Storage & Shelf Life

Liquid flux should be stored in dry, well-ventilated area, away from direct heat and flame. Shelf life is 2 years from date of manufacture.

Packaging

813 Liquid Flux is available in 1 Gallon and 5 Gallon containers and 55 Gallon drums.

Disposal

813 contains hazardous ingredients, therefore, should be disposed of in accordance with federal, state, and local authority requirements.