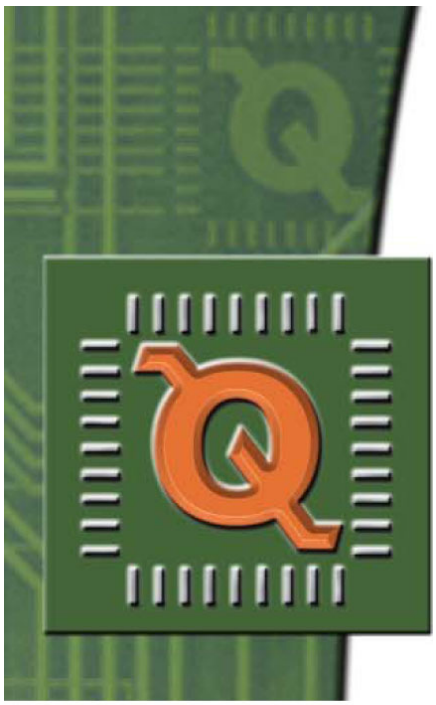

QUALITEK®

# QUALITEK® 814 WATER SOLUBLE HALOGEN-FREE FLUX

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## Description

Qualitek® 814 is a Halogen-Free Water Soluble Flux designed for wave soldering and surface mount assembly applications. Qualitek 814 was developed mainly for foaming applications, but may be applied by dip, spray or brush methods. 814 is very effective for lead tinning.

Main Features

- Halogen-Free
- Excellent for lead tinning
- Highly active flux

### 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$^3$)** | 0.943 ± 0.009 | |
| **pH Value** | 3 ± 0.5 | |
| **Solids Content, % Wt.** | 23 ± 2.0 | IPC-TM-650 2.3.34 |

## Applications

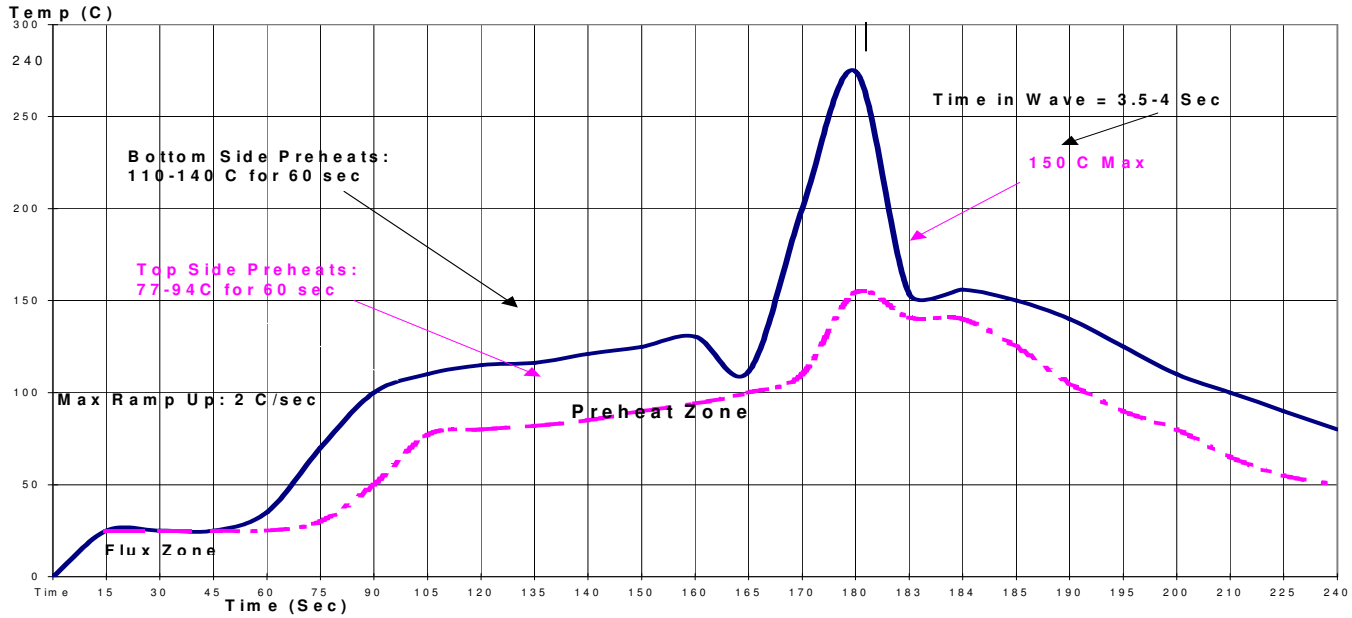
**Flux Application**

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<br>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

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

## Disposal

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