

# QUALITEK<sup>®</sup> 735VF/735VFF WATER SOLUBLE VOC-FREE FLUX

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## Description

Qualitek® 735VF/VFF is a, VOC-free Water Soluble flux designed for wave soldering, surface mount board assembly and through-hole applications. Qualitek 735VF/VFF is a water-based, non-flammable flux designed to improve soldering performance. 735VF is intended for spray applications, whereas 735VFF is designed specifically for foaming applications.

### Main Features

- VOC-Free
- Water washable
- Designed for Leaded solder systems

## Technical Data

	Specification	Test Method
<b>Flux Classification</b>	ORH1	IPC-J-STD-004B
<b>Color and Appearance</b>	Colorless Liquid	
<b>Copper Mirror</b>	Complete removal of copper film	IPC-TM-650 2.3.32
<b>Corrosion (Cleaned)</b>	Pass	IPC-TM-650 2.6.15
<b>Specific Gravity (g/cm<sup>3</sup>)</b>	1.05 ± 0.01 (Spray and Foam)	
<b>pH Value</b>	2.10 ± 0.3 (Spray)	
<b>Solids Content, % Wt.</b>	15.0 – 18.0 (Spray)	
<b>Acid Number</b>	58 ± 2.0 (Foam)	Titration

## Applications

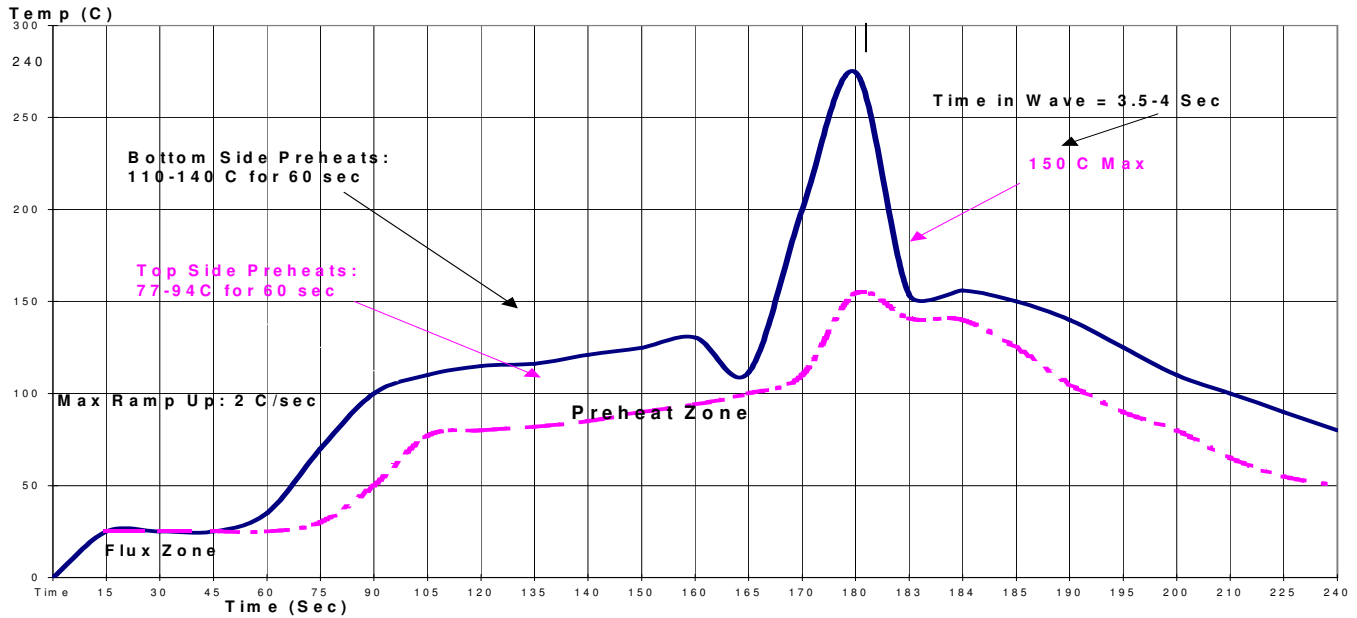
### Flux Application

For mass wave soldering of OSP and plated circuit boards, spray, foam or wave fluxing can be utilized to apply this flux. Flux deposition density and uniformity are critical to successful use of low solids water soluble 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 <sup>2</sup> solids Spray: 750-1500 µg/in <sup>2</sup> 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 consistent amount of flux is applied to assemblies. Monitoring and controlling specific gravity is recommended for maintaining proper flux concentration. Density (specific gravity) can be performed using a hydrometer. Control of the flux can be achieved with deionized water 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, thus; no neutralizer is needed. De-ionized water should be used in the final rinse for cleanliness results beyond MIL-28809A. Spray pressures should be maintained at 20-30 psi and conveyor speed of 3-6 ft. /min.

**Storage & Shelf Life**

Qualitek 735VF/VFF should be stored in a cool, dry environment away from direct heat. Shelf life is 2 years from date of manufacture.

**Packaging**

735VF and 735VFF VOC-Free Water Soluble Fluxes are available in

- 1 Gallon/1 Liter containers
- 5 Gallon/5 Liter containers
- 55 Gallon/20 Liter containers

**Disposal**

Both 735VF and 735VFF Water Soluble Fluxes contain some hazardous ingredients, therefore, should be disposed of in accordance with federal, state, local & federal authority requirements.

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