

# QUALITEK® 358NVOC NO CLEAN 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® 358NVOC is a halide-free, VOC-free flux designed for wave soldering, surface mount board assembly and through-hole applications. Qualitek 358NVOC is a water-based, non-flammable flux designed to improve soldering performance by minimizing bridging and other solder defects when applied using spray techniques.

Main Features

- ❑ VOC-Free formulation
- ❑ Excellent solderability
- ❑ Halide-Free
- ❑ Compatible with Lead-Free & Leaded Solder Systems

**Technical Data**

	<b>Specification</b>	<b>Test Method</b>
<b>Flux Classification</b>	ORL0	IPC-J-STD-004B
<b>Color and Appearance</b>	Colorless Liquid	
<b>Copper Mirror</b>	Pass	IPC-TM-650 2.3.32
<b>SIR</b>	$2.06 \times 10^{12}$ ohms	IPC-TM-650 2.6.3.3
<b>Specific Gravity (g/cm<sup>3</sup>)</b>	1.02 ± 0.010	
<b>Solids</b>	7.0 – 9.0	
<b>Acid Number (mgKOH/g)</b>	50.0 – 60.0	Titration

(this portion intentionally left blank)

## Applications

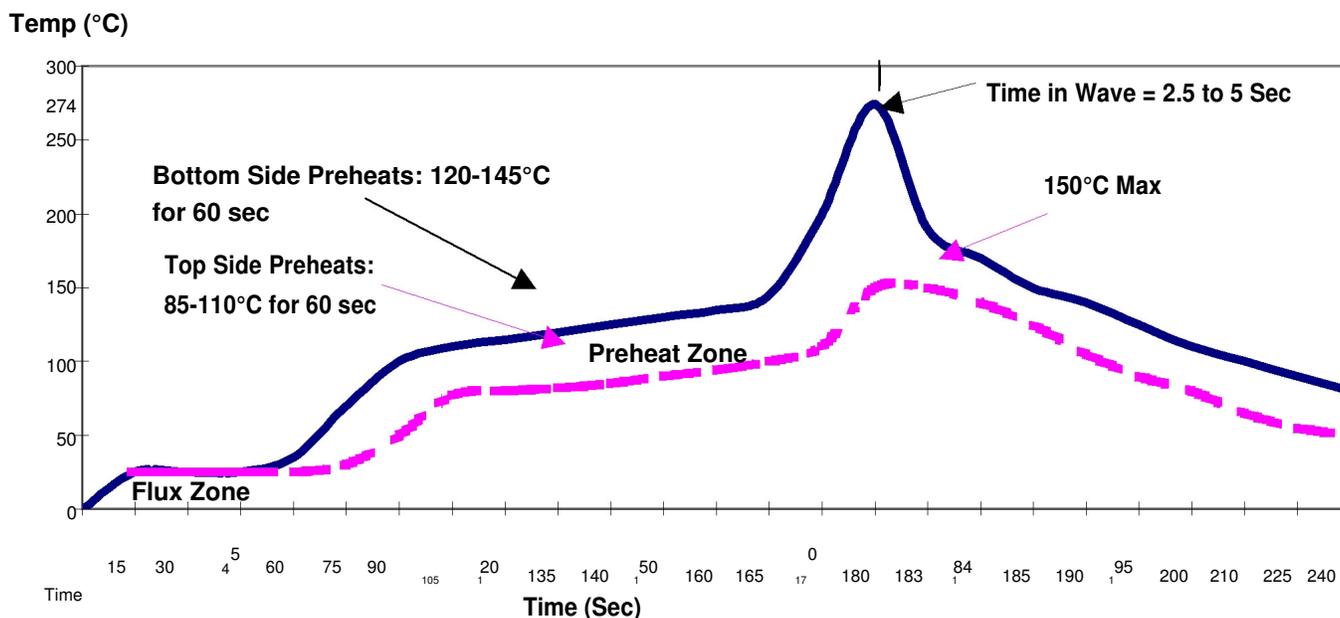
### Flux Application

For mass wave soldering of OSP and plated circuit boards, spray or wave fluxing is typically utilized. However, spray fluxing provides superior control of flux deposition density and uniformity, which are critical to the use of low solids, no-clean fluxes. For this reason, 358NVOC has been specifically designed for spray applications, as well as to take advantage of surface reducing agents best suited for water-based fluxes.

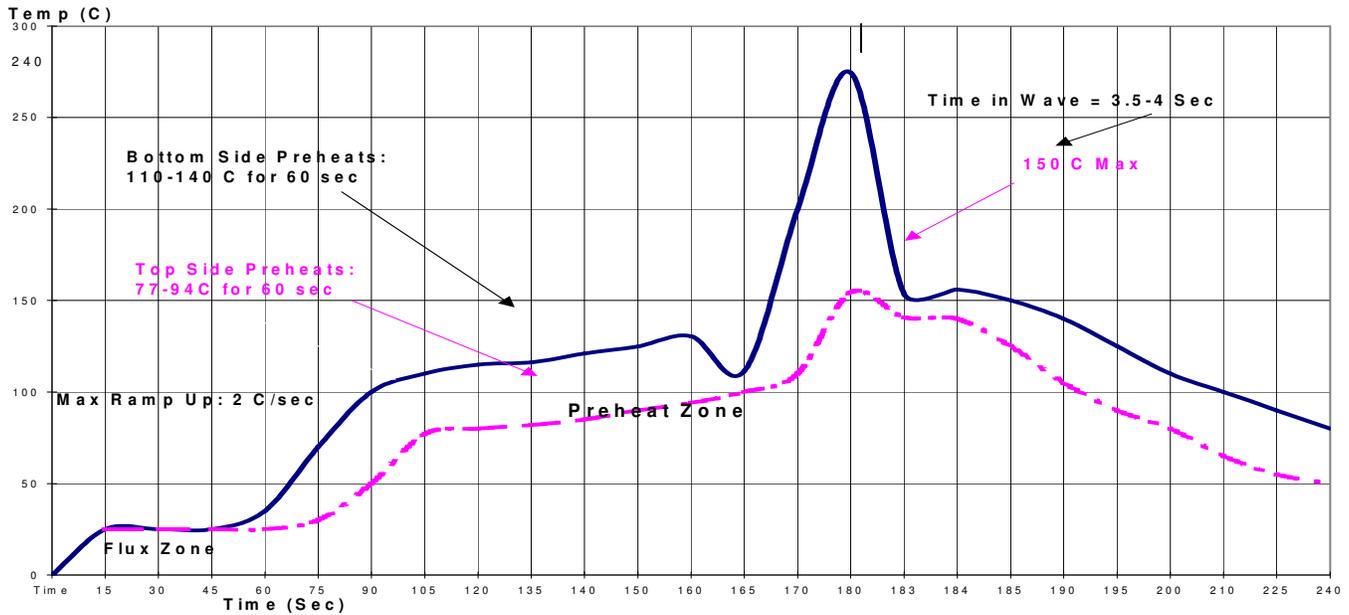
The uniformity of the coating can be visually checked by running a tempered glass plate (usually available through the machine manufacturer) through the spray and preheat sections, and inspected before going across the wave.

OPERATING PARAMETERS		TYPICAL LEVEL
Amount of flux		Foam, Wave: 1000-2000 $\mu\text{g}/\text{in}^2$ solids Spray: 750-1500 $\mu\text{g}/\text{in}^2$ solids
Foam Fluxing Parameters		
	Foam Stone Pore Size	20-50 $\mu\text{m}$
	Flux Level Above Stone	1-1 1/2 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		
	Sn96.5/Ag3.5	500-530 °F (260-276 °C)
	Sn95/Ag5	536-565 °F (280-296 °C)
	Sn99.3/Cu0.7	510-530 °F (265-276 °C)
	<b>SnAgCu</b>	520-530 °F (271-276 °C)
	Sn95/Sb5	536-565 °F (280-296 °C)

### TYPICAL Lead Free Wave Solder Profile (SNAGCU)



**TYPICAL Leaded Wave Solder Profile (Sn63/Pb37)**



**Process Control**

Control of flux during use is necessary to assure consistent flux deposition on the circuit board. Due to the very low solids content of no clean fluxes, specific gravity is not an accurate measure for assessing solids content. Monitoring and controlling acid number by titration is recommended for maintaining the proper flux concentration. 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.

**Cleaning**

358NVOC is a no clean formulation; therefore, the residues do not need to be removed for typical applications. If residue removal is desired, the use of Everkleen 1005 Buffered Saponifier with a 5-15% concentration in hot 60 °C (140 °F) will aid in residue removal.

**Storage & Shelf Life**

358NVOC Liquid Flux should be stored in a 65-80°F environment away from direct heat. Shelf life is 2 years from date of manufacture.

## **Packaging**

358NVOC No Clean Liquid Flux is available in

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

## **Disposal**

358NVOC contains some hazardous ingredients; therefore, the flux should be disposed of in accordance with federal, state, local & federal authority requirements.

Qualitek® is a brand of Qualitek International, Inc.