

QUALITEK® 357NVOC NO CLEAN FLUX

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Description

Qualitek® 357NVOC is a halide-free, VOC-free flux designed for wave soldering, surface mount board assembly and through-hole applications. Qualitek 357NVOC is a water-based, non-flammable flux containing a unique activator system that provides excellent hole-fill and reduced solder balling. 357NVOC contains very low solids so leaves virtually no residue after wave soldering process.

Main Features

- VOC-Free formulation
- Excellent hole fill
- Halide-Free
- Compatible with Lead-Free & Leaded Solder Systems

Technical Data

	Specification	Test Method
Flux Classification	ORL0	IPC-J-STD-004B
Color and Appearance	Colorless Liquid	
Copper Mirror	Pass	IPC-TM-650 2.3.32
SIR	3.50×10^{11} ohms	IPC-TM-650 2.6.3.3
Specific Gravity (g/cm³)	1.01 ± 0.010	
Solids Content	2.0 ± 0.5	
Acid Number (mgKOH/g)	20.0 – 24.0	Titration

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Applications

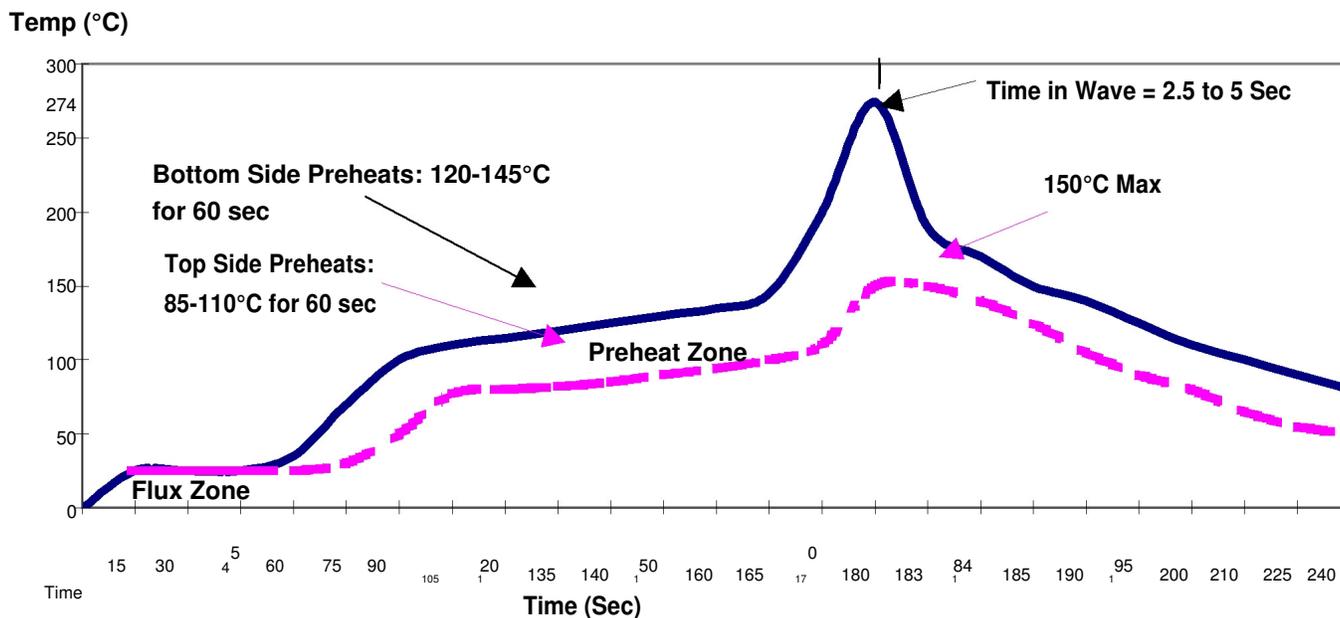
Flux Application

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.

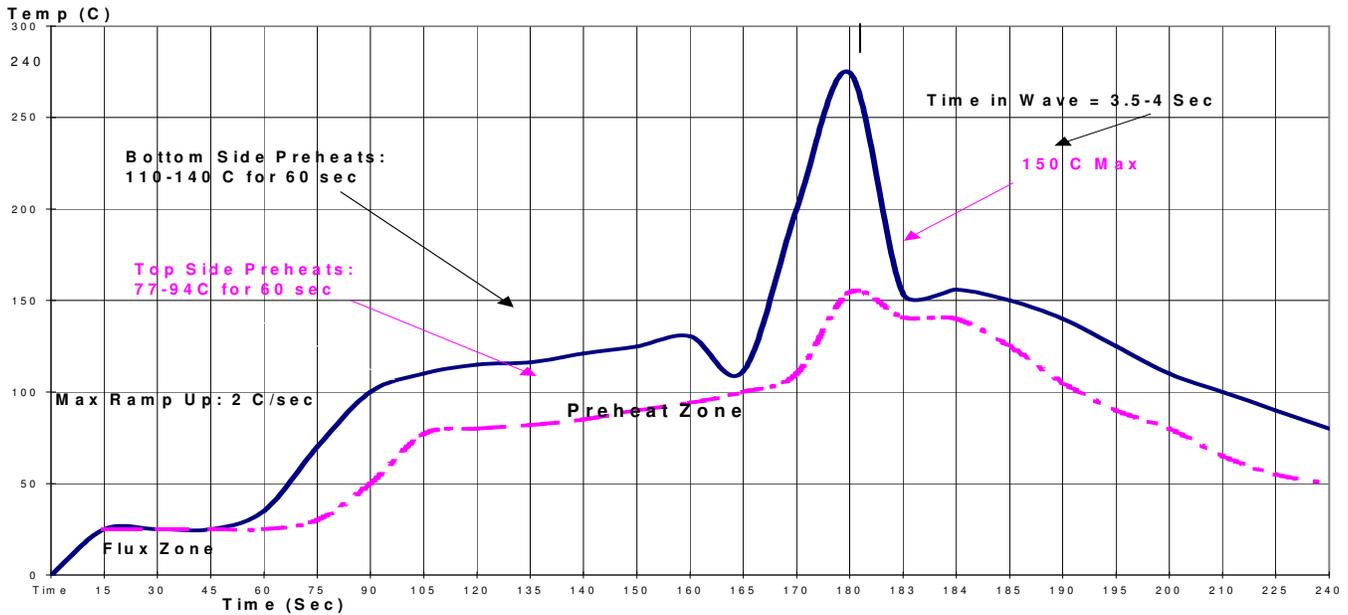
The uniformity of the coating can be visually checked by running a tempered glass plate (usually available through the machine manufacturer) through the spray and preheat sections, and inspected before going across the wave.

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 μm
	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)
	SnAgCu	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

357NVOC 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

357NVOC Liquid Flux should be stored in a 65-80°F in a cool, dry environment. Shelf life is 2 years from date of manufacture.

Packaging

357NVOC No Clean Liquid Flux is available in

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

Disposal

357NVOC 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.