

## Qualitek 355-35 NO CLEAN FLUX

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## Physical Properties

Qualitek has developed a unique flux system designed specifically for high temperature lead free alloys. It provides the fluxing activity levels that promote fast wetting action and maximum wetting spread. 355-35 flux eliminates skips and shorts often experienced in wave solder assembly.

### Main Features

- Excellent wettability
- Non-conductive non-tacky residues
- Compatible with Lead free & Leaded Solder Systems
- VOC, Halide Free

		<b>Specification</b>	<b>Test Method</b>
<b>Flux Classification</b>		ORL0	JSTD-004
<b>Copper Mirror</b>		No removal of copper film	IPC-TM-650 2.3.32
<b>Silver Chromate</b>		Pass	IPC-TM-650 2.3.33
<b>Corrosion</b>		Pass	IPC-TM-650 2.6.15
<b>SIR</b>			
JSTD-004,	Pattern up	$3.06 \times 10^{12}$ ohms	IPC-TM-650 2.6.3.3
	Pattern down	$4.68 \times 10^{14}$ ohms	
Bellcore (Telecordia)		$5.77 \times 10^{12}$ ohms	Bellcore GR-78-CORE 13.1.3
<b>Electromigration</b>		Pass	Bellcore GR-78-CORE 13.1.4
<b>Acid Value</b>		41+/-2.0	IPC-TM-650 2.3.13
<b>Specific Gravity</b>		1.007+/-0.010	
<b>Solids Content</b>		4.0-5.0	IPC-TM-650 2.3-34

## Applications

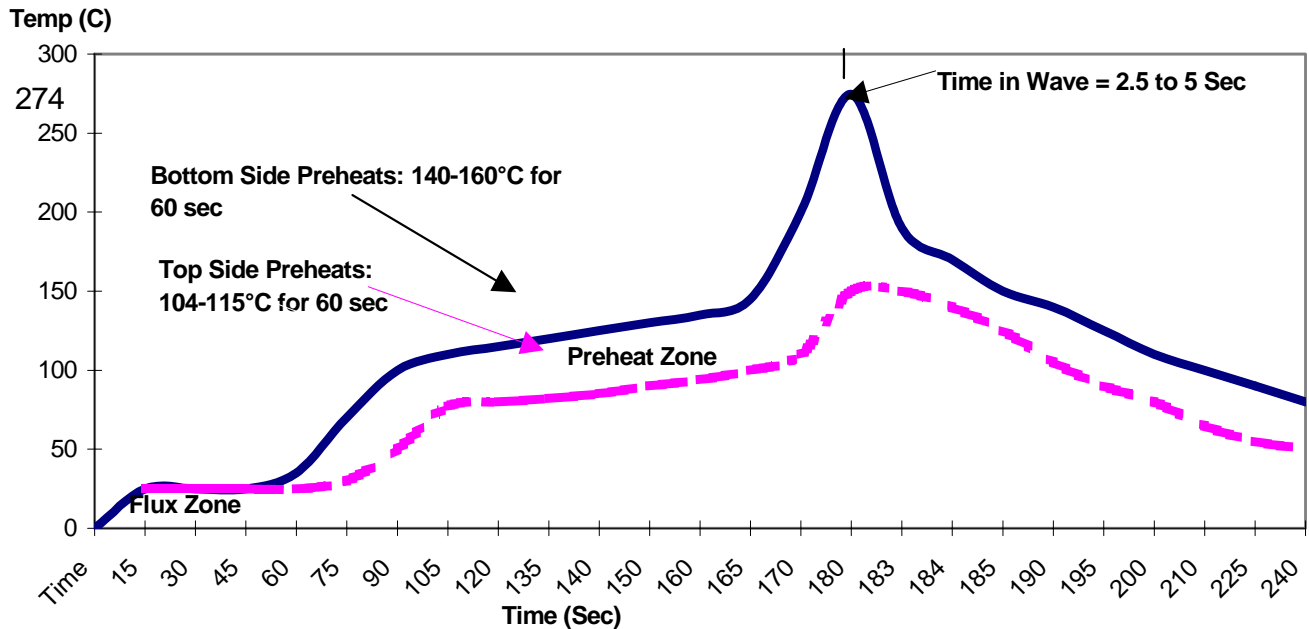
### Flux Application

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, 355-35 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		Spray: 750-1500 ug/in <sup>2</sup> of solids
Top Side Preheat Temperature		219-239 °F (104-115 °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)
	Sn99.3/0.7Cu	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)



## **Process Control**

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Control of flux during use is necessary to assure a consistent amount of flux is applied to assemblies. 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. Titration can be done with Qualitek HDT-200 Digital Titration kit. Control of the flux can be achieved with DI 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.

NOTE: When directly handling solder flux it is recommend to use appropriate gloves.

## **Cleaning**

355-35 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**

Liquid fluxes storage should be in a 65-80°F environment away from direct heat and flame. The flux shelf life in these recommended storage conditions is 2 years.

## **Disposal**

355-35 contains hazardous ingredients therefore the flux should be disposed of in accordance with state & local authority requirements.

## **Packaging**

355-35 No Clean Flux is available in

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