



# QUALITEK®

## 351 Flux VOC-Free, No-Clean

### DESCRIPTION

351NVOC is a water-based, water-soluble, halide free flux designed for mass soldering of conventional and surface mount PCB assemblies. 351NVOC is formulated to remain active after the chip wave, virtually eliminating the occurrences of solderballing.

### BENEFITS

- Rapid wetting on virtually all types of substrates
- CFC Free
- VOC Free
- Halide Free
- Remains active after the chip wave
- Low residue
- Bright, shiny solder joints
- Pin testable
- Virtually eliminates solder balls and bridging

### APPLICATION METHODS

351 no-clean flux may be applied by spray or wave methods. Flux deposition, density, and uniformity are critical to successful use of low solids no-clean flux. Pre-heating the assembly will partially volatilize the solvents, enhance oxide removal, and promote optimum wicking and solder joint formation. The optimum pre-heat temperature range is 104<sup>o</sup>–115<sup>o</sup>C (220<sup>o</sup>-240<sup>o</sup>F) on the top side of the assembly.

### PACKAGING & STORAGE

351 flux is available in 1, 5 and 55 gallon containers. It should be stored in cool, dry place away from ignition sources. Due to this formulation being water-based, it is subject to freezing. A minimum storage temperature of 40<sup>o</sup>F is recommended. Should the flux become frozen, 351 will reconstitute upon returning to a liquid.

### PHYSICAL & CHEMICAL CHARACTERISTICS

<b>Color and Appearance</b>	Light Straw Liquid
<b>Solids Content, % (By Wt.)</b>	2.8
<b>Flash Point</b>	None
<b>Specific Gravity</b>	1.065 +/- 0.010
<b>pH 5% sol</b>	2.98
<b>Surface Insulation Resistance-Ohms</b> J-STD-004	>1.00 x 10 <sup>8</sup>
<b>Acid Number</b>	36.0 +/- 2.0
<b>Flux Classification per J-STD-004</b>	ORLO
<b>Copper Mirror Test</b>	Pass (No complete breakthrough)
<b>Silver Chromate Test</b> Chloride and Bromide	Pass (No discoloration)
<b>Spot Test (Flouride )</b>	Pass (No color change)
<b>Corrosion Test</b>	Pass (No evidence of corrosion)
<b>Shelf life (un-opened)</b>	2 years

### PROCESS CONTROL

Control of the flux is necessary to ensure a consistent amount of flux is applied to assemblies. Due to the very low solids percentage of no-clean fluxes, specific gravity is not an accurate measure for solids content. Monitoring and controlling acid number is recommended to maintain the proper flux concentration. Titration may be accomplished with the Qualitek HDT-200 Digital Titration Kit. Control of the flux can be achieved with DI water. Debris and contaminants will accumulate in the flux reservoir. Periodically, the replacement of the flux is required for consistent soldering performance, and to prevent debris build-up on the circuit assembly. This should be performed every 35-40 hours of operation.

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Consult MSDS for health and safety information