

QUALITEK® 713N WATER SOLUBLE FLUX

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Description

Qualitek® 713N is a highly active organic flux designed for complete water solubility of post-soldering residues. 713N is a non-splattering, water-free organic formulation suitable for high speed soldering operations. Since 713N does not contain any glycols or glycol derivatives, it will not omit an excess amount of fumes. Using 713N, post-soldering residue is minimal and may easily be removed using water.

Main Features

- Excellent wetting
- Residues easily removed
- Designed for Leaded solder systems

Technical Data

	Specification	Test Method
Flux Classification	ORH1	IPC-J-STD-004B
Color and Appearance	Colorless Liquid	
Copper Mirror	Complete removal of copper film	IPC-TM-650 2.3.32
Corrosion (Cleaned)	Pass	IPC-TM-650 2.6.15
SIR (Cleaned)	4.10 x 10 ¹⁰ ohms	IPC-TM-650 2.6.3.3
Specific Gravity (g/cm³)	0.888 ± 0.006	
pH Value	3.75 ± 0.25	
Solids (Wt. %)	4.5 ± 0.5	
% Halides	1.9	

Applications

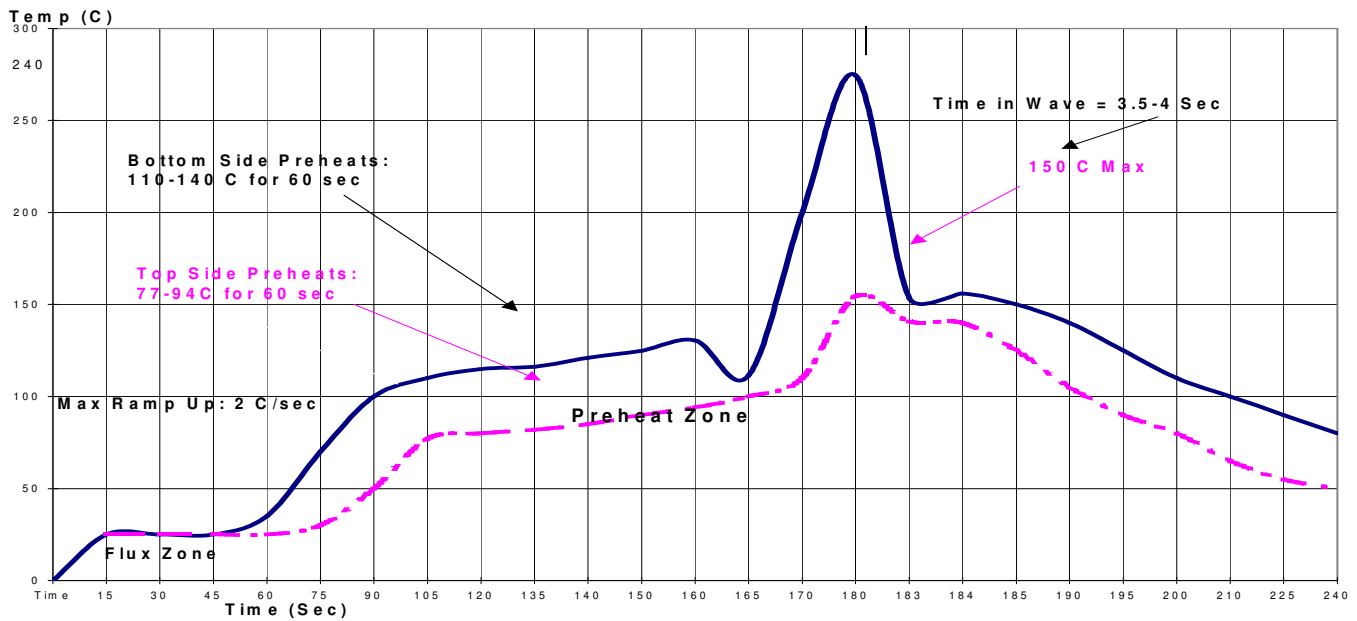
Flux Application

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 1-1/2 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 ² solids Spray: 750-1500 µg/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	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 700T thinner 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.

#713N Flux	
Specific Gravity	Thinner Required Fl oz/ga
0.888	0
0.891	6
0.894	12
0.897	17
0.900	22
0.903	26

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

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

Packaging

713N Water Soluble Flux is available in

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

Disposal

713N Water Soluble Flux contains hazardous ingredients therefore the flux should be disposed of in accordance with federal, state and local authority requirements.

Qualitek® is a brand of Qualitek International, Inc.