



free  
halogen®

# WF-710 WAFER FLUX

**USA:** 315 Fairbank St. Addison, IL • +1-630-6288083 • FAX +1-630-6286543

**EUROPE:** Unit 9 Apex Ct. Bassendale Rd. Bromborough, Wirral CH62 3RE • +44-151-3340888 • FAX +44-151-3461408

**SINGAPORE:** 6 Tuas South St. 5 Singapore 637790 • +65-67957757 • FAX +1-65-67957767

**PHILIPPINES:** Phase 1 Qualitek Ave. Mariveles, Bataan Philippines C-2106 • +63-47-9354163 • FAX +63-47-5613717

**CHINA:** 3B/F, YiFa Print Bldg. 351 JiHua Rd., Buji Shenzhen, China 518112 • +86-755-28522814 • FAX +86-755-28522787

This data is based on information that the manufacturer believed to be reliable and offered in good faith. Qualitek International, Inc. makes no warranties expressed or implied as to its accuracy and assumes no responsibilities and liabilities arising out of its use by others as conditions and methods of use of the products is beyond the control of Qualitek International, Inc. The user must determine the suitability of the product before using it on a commercial basis. The warranties extend only to the conformity of the product to the physical descriptions. In no event will Qualitek International, Inc. be responsible for special, incidental and consequential damages whether the claim is in contract, negligence or otherwise. Qualitek specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.

**DESCRIPTION**

Qualitek has developed a water-soluble flux system designed to remove surface oxides from solder bumps on wafers. WF-710 produces hemispherical bumps without inducing solder bridging or solder removal. WF-710 is designed for both spin-coat and spray applications.

**FEATURES**

- No residue after several cleaning cycles
- Produces uniform bump shape
- Halogen-Free
- Compatible with Lead-Free & Leaded Solder Systems
- Non-corrosive to underbump metallization

**APPLICATION METHOD**

For spin coating applications, an initial rotation speed should be used to spread this wafer flux uniformly onto the wafer. Secondly, we recommend using a high velocity rotation (~1200 rpm) to thin the flux and remove excess flux from the wafer surface.

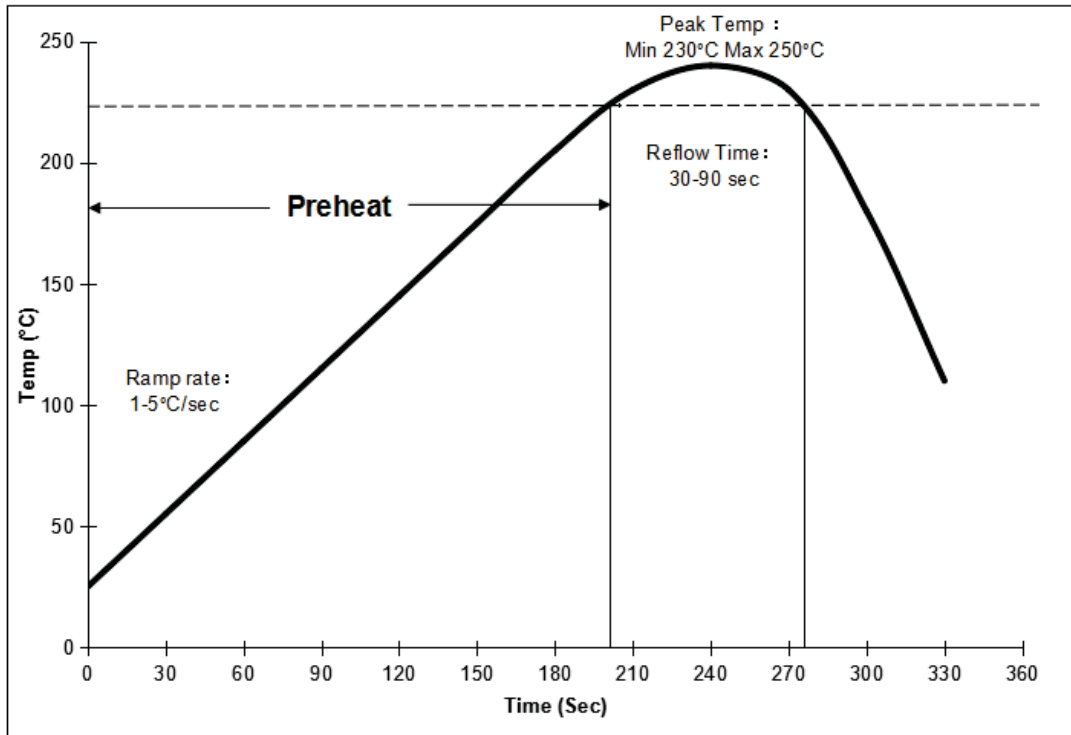
For spray applications, the flux storage tank should be sufficient enough for one 8-hour shift. The wafer flux may evaporate if left for a prolonged amount of time. Spray equipment should be cleaned frequently to ensure a high level of purity.

**PHYSICAL & CHEMICAL PROPERTIES**

PROPERTIES	SPECIFICATIONS	METHOD
Flux Classification	ORL0	IPC-J-STD-004B
Appearance	Amber to Brown	Visual
pH - 5% Aqueous Solution	4.2 - 5.2	QIT
Halide Content	Halide-Free	IPC-TM-650 2.3.33 (Silver Chromate Test)
Halogen Content	Halogen-Free	EN 14582
Brookfield Viscosity (@10rpm)	100 - 300 cps	IPC-TM-650 2.4.34 (Modified)
Specific Gravity (25±0.5°C)	1.000 - 1.100	QIT
Surface Insulation Resistance (Cleaned)	> 1.0 x 10 <sup>9</sup> ohms	IPC-TM-650 2.6.3.3

**REFLOW**

The following is a recommended profile for leadfree alloy:



Reflow can be accomplished in a nitrogen controlled atmosphere at  $\leq 100$  ppm oxygen levels.

The initial ramp rate should be 1 – 5°C per second to a peak temperature of 230 – 250°C.

The time over liquidus temperature should be 30 - 90 seconds.

The profile is recommended to the user as reference, and should be optimized by the user to meet individual process needs.

**CLEANING**

WF-710 can be cleaned with DI water or water with detergent added. Recommended cleaning conditions for spray-cleaning are 50 °C or higher for at least 5 minute at >1000 psi.

**PACKAGING**

1 Gallon/5 Liter, 5 Gallon/20 Liter containers

**STORAGE & SHELF LIFE**

Wafer Fluxes storage should be in a 20°C - 25°C environment away from direct heat and flame. When directly handling wafer flux, it is recommended to use appropriate gloves. Wafer flux shelf life is 1 year from DOM (Date of Manufacture).

**DISPOSAL**

WF-710 contains hazardous ingredients therefore the flux should be disposed of in accordance with the state & local authority requirements.