

# ALPHA<sup>®</sup> WS-809 BGA Flux

## WATER SOLUBLE BGA FLUX

This Water Soluble flux is engineered to be used in the rework and repair associated with BGA components. Before reflow, the flux provides sufficient tack to hold the BGA in place. After reflow the residue is easy to clean with warm to hot water. The flux is the same material used to produce WS-809 solder paste.

### PHYSICAL, CHEMICAL AND ELECTRICAL PROPERTIES OF FLUX

Appearance	Smooth, Dark Red/Amber Color, free of lumps or air entrapment
Density	1.0-1.1g/cc
Viscosity (Spiral/Malcom 5 RPM)	Typically 220-440 Poise @ 25°C
pH	6-7
Acid Number (mg KOH/g)	60-67
IPC Classification (as Flux Only)	ORH1
Moisture Content	< 0.70 % Max (w/w)

### REFLOW

Reflow can be accomplished in dry air or nitrogen controlled atmosphere. The initial ramp rate should be 0.5 to 1.3°C/second, with a time above liquidus of 40 to 120 seconds, and a maximum time from room temperature to peak of less than 4 minutes. A soak temperature of 145° to 160° C for 90 seconds or less in air can also minimize voiding. Longer soak times are possible if nitrogen is used in the reflow atmosphere. Cooling rate should be 3 - 7°C per second to room temperature.

The peak temperature will depend on the alloy of the BGA spheres. Check the component technical bulletin for temperature resistance data and guidance on peak temperature limitations.

### USE

The flux may be applied by screen printing or pin transfer (substrate) or doctor blade / dip coating (package).

### CLEANING

WS-809 flux residue must be removed from electronic assemblies. Heated, deionized water (120°-160°F/ 50°– 70°C) along with spray or agitation should be used to remove the residue.

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09-18-09





## **STORAGE**

The flux should be stored in sealed containers and need not be refrigerated. Shelf life of unopened containers is nominally 12 months. If the material has been chilled, the container should be allowed to reach room temperature before opening in order to prevent moisture condensation from ambient air onto the flux.

## **SAFETY**

While WS-809 flux is not considered toxic, its use in typical reflow processes will generate some decomposition and reaction vapors. These vapors should be adequately exhausted from the work environment and away from personnel. Consult the Material Safety Data Sheet for additional safety information.





**Cookson Electronics** ASSEMBLY MATERIALS

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