Technical Bulletin

WS600 Red/WS600MHV Red/WS600L Red

Water Soluble BGA/CSP Flux

This Series of water soluble BGA/CSP fluxes are engineered for attaching tin-lead eutectic or Pb-Free spheres to BGAs or CSPs. Included in their composition is red dye for ease of pre-flow visual inspection.

APPLICATIONS

- WS600 Red: Standard flux for BGA/CSP applications.
- WS600MHV Red: Modified flux for higher viscosity, stencil printing and higher humidity applications where “hot slump” is a concern.
- WS600L Red: Modified flux for lower viscosity applications.

PHYSICAL AND CHEMICAL PROPERTIES

Color	Deep Amber or Deep Red
Tack Strength (g/cc)	~ 15
Stencil Life, 40-60%RH/20-25°C (hours)	~ 8
Water Extract Resistivity (ohm•cm)	>100,000
	High RMA, Low RA Class
Corrosiveness	Passes Copper Mirror
Halide Content	Halide Free
pH, Flux Residues	6.8 typical
SIR (ohms) 7 Days	$>10^9$, cleaned, 85°C/85% RH (pass $>10^7$)
Wetting Balance	Faster than traditional RMA's
Carrier Resin	Completely Water Soluble

VISCOMETRY (Spiral/Malcom)

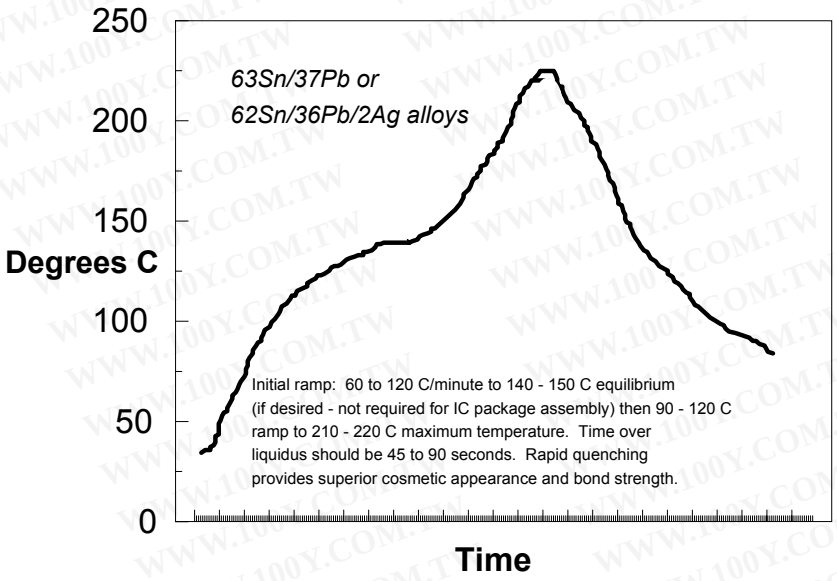
Typical
~ 600 POISE @ 5 rpm (WS600)
~ 800 POISE @ 5 rpm (WS600MHV)
~ 500 POISE @ 5 rpm (WS600L)

STORAGE

These fluxes should be stored in sealed containers at 15° - 25°C and should not be refrigerated. Temperatures above 27°C should be avoided. Shelf life of unopened containers is nominally 12 months. Refrigeration is NOT required to store the fluxes and temperatures below 5°C should be avoided. If a container has been chilled, it should be allowed to reach room temperature before opening in order to prevent moisture condensation from forming onto the flux.

REFLOW

Sample Profile is indicated below for Convection Reflow Furnaces:



RESIDUE REMOVAL

Water at less than 60°C without saponifier is suitable to achieve excellent results. Spray pressures of 35 to 65psi are sufficient to remove all residues. Cleaning results using any of the WS600 Series may exceed those achievable using traditional RMA materials. Ionic contamination readings as low as 2.0µ grams per square inch are possible with these very cleanable fluxes.

SAFETY

While the WS600 Series of BGA/CSP fluxes are not considered toxic, their use in typical reflow processes will generate a small amount of 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.