

ALPHA[®] WS9180-MHV

Water-Soluble Flux for Semiconductor Ball-Attach

DESCRIPTION

ALPHA WS9180-MHV water soluble halide free flux is engineered to be used in the attachment of lead-free or tin-lead eutectic spheres onto BGA or CSP components as well as ball drop on wafer WLCSP applications. It is highly compatible with Cu-OSP, electrolytic Ni-Au and ENEPIG pad finishes with best-in-class fluxing activity resulting in maximized yield.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- Excellent Wettability
- Excellent Cleanability
- Halide-free Formulation
- Excellent material stability – maintains viscosity tack and viscosity over time
- Can be used in nitrogen or air environments
- Wide process window for maximum application flexibility
- Excellent print and pin-transfer stability

EXCELLENT PRINT AND PIN-TRANSFER STABILITYAPPLICATION

- Pin Transfer
- Ball Dip
- Screen Print, metal mask, or doctor-blade
- Dispense

PHYSICAL AND CHEMICAL PROPERTIES

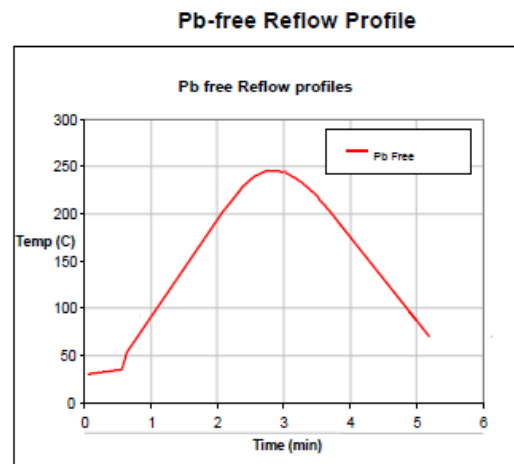
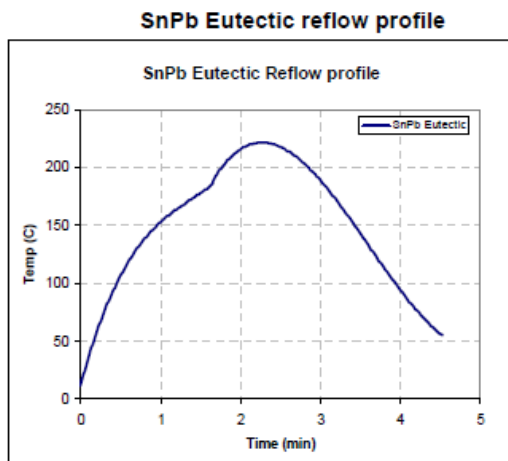
ALPHA WS9180-MHV Technical Data		
Category	Results	Procedures/Remarks
Chemical Properties		
Activity Level (J-STD Classification)	ORH0	IPC J-STD-004
Halide Content	Halide free (by titration). Passes Ag Chromate Test	IPC TM-650 Test Method 2.3.35
Copper Corrosion Test (after washing)	Pass, (No evidence of Corrosion)	IPC TM-650 Test Method 2.3.32
pH (5% Solution)	5 to 7	IPC-TM-650 pH Meter
Electrical Properties		
SIR (IPC 7 days @ 85 °C/85% RH)	Pass, > 10 ⁹ ohms	IPC-TM-650 method 2.6.3.3 {Pass ≥ 1 x 10 ⁸ ohm min}
Physical Properties		
Appearance	Deep Amber	Visual
Tack Strength (Time-0)	>200 gF	JIS Z 3284
Viscosity; Malcom Spiral Viscometer (@10 rpm)	950 ± 150 poise (typical)	ICPH213
Wetting Balance	Faster than traditional RMA's	SnPb, SAC305, SACX0307

REFLOW

Reflow can be accomplished in an air or nitrogen controlled atmosphere, with nitrogen environments with ≤ 500 ppm oxygen levels providing improved results. The initial ramp rate should be at 0.5 to 1 °C per second to a peak temperature of 230 to 245 °C (typical lead-free alloys), or 210 to 225 °C (typical lead bearing alloys). The time over the alloy's liquidus (183 °C for Sn63 or 217 to 227 °C for most SAC alloys) should be 45 to 90 seconds. Cooling rate should be ≥ 3 °C per second to room temperature.

Reflow Parameters (Pb Free)	Value
Ramp rate (°C/sec)	0.5 to 1
Typical Lead-Free Peak range (°C)	230 to 245
Time above liquidus (sec)	45 to 90
Cool down rate (°C/sec)	> 3.0

Example reflow profiles:



RESIDUE REMOVAL

Water wash temperature 40 to 60 °C without saponifier is suitable to achieve excellent results. Temperatures above 70 °C and spray pressures of 35 to 60 psi are sufficient to remove all residues. Cleaning results using ALPHA WS9180-MHV flux may exceed those achievable using traditional RMA materials.

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

STORAGE

This flux should be stored in sealed containers at 15 to 25 °C and should NOT be refrigerated. Shelf life of unopened containers is nominally 6 months. If a container 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.

CONTACT INFORMATION

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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