SM-922-1

ALPHA® OM-338-FC BGA Flux

NO-CLEAN LEAD-FREE BGA FLUX

This NO-CLEAN flux is engineered to be used in the placement and reflow of lead-free solders for BGA attach processes. Before reflow, the flux provides sufficient tack to hold the BGA in place. After reflow the residue is clear, colorless.

PHYSICAL, CHEMICAL AND ELECTRICAL PROPERTIES OF FLUX

Appearance	Smooth, white to off-white paste
Viscosity (Spiral/Malcom)	Typically 170 – 300 Poise @ 25°C (5 RPM)
Tack strength (per IPC J-STD-004)	
Initial	6.5 grams / sq mm
6 hr @ 50% RH	6.2 grams / sq mm
24 hr @ 50% RH	6.2 grams / sq mm
Fineness of Grind	<10 μm
Acid Number (mg KOH/g)	140 – 170
Corrosivity	Passes IPC Cu mirror, Cu corrosion
Halide Content	Halide free (ROL-0 per IPC J-STD-004)
Moisture Content	< 1.0 % (w/w)
J-STD-004 SIR (pass > 10^8)	4.2 x 10^9 Ohms, 1 Day, un-cleaned
J-STD-004 SIR (pass > 10^8)	6.8 x 10^9 Ohms, 4 Days, un-cleaned
J-STD-004 SIR (pass > 10^8)	8.9 x 10^9 Ohms, 7 Days, un-cleaned
BELLCORE SIR (pass > 10^{11})	7.3 x 10^{11} Ohms, 1 Day, un-cleaned
BELLCORE SIR (pass > 10^{11})	3.5 x 10^{11} Ohms, 4 days, un-cleaned
Electromigration (500 hours)	1.6 x 10^{11} Ohms, 96 hours
(BELLCORE)	4.0 x 10^{11} Ohms, 500 hours (pass: final > init /10)

REFLOW

Reflow can be accomplished in dry air or nitrogen controlled atmosphere. The initial ramp rate should be 1 - 2°C per second. If necessary, a dwell of 1 to 2 minutes at 130 - 160°C is acceptable. Following this equilibrating period is a ramp of 60 - 120°C to a peak temperature of 235 - 260°C depending upon alloy. The time over alloy liquidus should be 45 - 90 seconds. Cooling rate should be 3 - 7°C per second to room temperature.

USE

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

CLEANING

Although designed as a no clean flux system, the reflowed residue may be cleaned with BIOACT SC10E™ or BIOACT SC30™. Production stencils or pin transfer equipment can be cleaned with BIOACT SC-10™.

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 OM338 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.