Florida CirTech
LEADERS IN PCB TECHNOLOGY

Product Data Sheet

EB-610 Solvent Swell

DESCRIPTION

EB-610 is a water soluble, liquid solvent blend that is used to condition epoxy material. When used prior to permanganate etch back it helps to accelerate the action of the etch. It can also be used after sulfuric acid etch back to aide in the adhesion of electroless copper deposition. Its cleans the hole wall surfaces from debris allowing for maximum adhesion of the copper.

OPERATING PARAMETERS

Make-Up	45% **EB-610** by volume 1.5% **EB-613B** by volume Balance water
Temperature	150 to 180°F (65 to 82°C)- dependent on resin type
Immersion Time	5 to 20 minutes
Process	Batch Tank
Agitation	Recommended to improve swell action
Ventilation	Advised
Tanks	Stainless Steel, CPVC, Structurally Supported Polypropylene
Racks/Baskets	Stainless Steel
Heaters	Titanium, Stainless Steel, Teflon Coils

PHYSICAL PROPERTIES

Specific gravity	0.98-1.02
Appearance	Clear liquid
pH(1%solution)	NA
Odor	Glycol ether
Flash Point	>200F

CONTROL PROCEDURES

Replenishments can be made to **EB-610** working solution. Additions are made on analysis for both components. When the total volume of additions equals the initial makeup concentration, the solution should then be replaced. Also, if the bath separates into layers, this indicates saturation with resins, and the bath should be replaced.

Temperature and dwell time are both dependent upon resin type. Please see the table below for optimal parameters.

Resin Type	Solution Temperature (°F)	Dwell Time (min)
FR4 140-150 Tg	160-180	10
FR4 155-175	160-180	20
Tetra functional	160-180	10-15
Polyimide	180	10-15
Di-epoxy	150-160	5

ANALYSIS

EB 610 Concentration

PROCEDURE

1. Transfer 100 mls of **EB-610** the working solution into a 250-ml beaker.

2. Add 10 grams of sodium hydroxide pellets and mix until dissolved.

3. After the solution separates, pour the entire solution into a 100 ml graduated cylinder.

4. Measure the volume of the upper layer to determine the percent concentration of **EB-610** in the solution.

Maintain the concentration of **EB-610** to between 40 and 50% by volume.

EB 613B Concentration

PROCEDURE

1. Pipet 20 mls of the working solution into a 250-ml flask

2. Add 1 - 2 drops of phenolphthalein indicator solution.

3. Titrate with 1.0N acid to a clear endpoint. Record the number of ml used.

4. CALCULATION:

% **EB-613B** = (ml of acid used) x (Normality of acid) x 0.25

Maintain the concentration of **EB-613B** between 1.0% and 1.5% by volume.

SAFETY AND STORAGE

EB-610 is a strong alkaline solution containing inorganic and organic alkali. Avoid breathing vapors. Use product in a well-ventilated area. When handling concentrate or working solution wear protective clothing,

gloves, and chemical safety goggles. In case of skin contact, remove contaminated clothing and flush affected area with plenty of cold water. In case of eye contact, flush immediately with plenty of cold water and seek medical attention immediately.

WASTE TREATMENT

EB-610 contains organic and inorganic alkali. In the process of cleaning the imaged surface of copper clad material, some copper may be removed and dissolved in solution. The spent working solution of **EB-610** should be treated for copper before sending the spent solution to the chemical sewer. Consult with local officials for further waste disposal regulations. Please ask a Florida CirTech technical sales rep. for more information regarding waste treatment of this chemistry and our complete line of waste treatment line if additional help or information is desired.

MISCELLANEOUS

Available in 5-gallon pails and 55 gallon drums. Consult MSDS for additional information.