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Technical Bulletin CK-300 Catalyst Killer

I. DESCRIPTION

CK300 is a highly concentrated, acidic, liquid concentrate which was developed to clean printed circuits prior to the ENIG process. CK300 will remove palladium catalyst residues left behind from the electroless copper process. This prevents ENIG plating in the non-plated through holes. CK300 also contains a blend of surfactants designed to remove surface contaminants normally found before the ENIG process. CK300 does not contain alkyl phenol type surfactants.

II. OPERATING PARAMETERS

Make-Up	10% to 20% by volume CK300 (15% nominal)
Temperature	100 to 110 °F
Immersion Time	5 to 7 minutes
Process	Batch Tank
Agitation	Will speed cleaning action
Ventilation	Required
Tanks	Polypropylene, Polyethylene
Racks/Baskets	Plastisol Covered Steel
Heaters	Quartz, Teflon Coils

III. PHYSICAL PROPERTIES

Specific gravity	1.29 – 1.32
Appearance	Clear – to Dark amber liquid
pH	< 1.0
Odor	Acrid, acidic
Flash Point	>200F

IV. CONTROL PROCEDURES

Replenishments can be made to CK300 working solution. When the total volume of additions equals the initial make-up concentration, the solution should then be replaced.

V. ANALYSIS

CK300 CONCENTRATION

REAGENTS AND EQUIPMENT NEEDED

1.0 Normal Sodium Hydroxide Solution

Phenolphthalein Indicator Solution

10 ml pipet

250 ml Erlenmeyer Flask

PROCEDURE

1. Pipet 10 ml of the working solution into a 250-ml Erlenmeyer flask.
2. Dilute with 100 ml of de-ionized water.
3. Add 2 to 3 drops of phenolphthalein indicator.
4. Titrate with 1.0 Normal sodium hydroxide to the pink endpoint.
5. Calculation:

$$\text{CK300 (\% by vol.)} = (\text{ml NaOH}) \times (\text{N NaOH}) \times 0.94$$

VI. SAFETY AND STORAGE

CK300 is an acidic solution containing sulfuric acid and fluorides. Avoid breathing vapors. Use 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.

Store CK300 in its original container. Keep away from direct sunlight and temperature extremes. Protect from freezing.

VII. WASTE TREATMENT

CK300 contains sulfuric acid and fluorides. 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 CK300 may be treated by pH adjusting the solution to above 10 with dilute caustic soda. Allow the precipitate to settle, filter the solution, and pH adjust it to between 6 and 8 with dilute sulfuric acid before sending the spent solution to the sewer. Consult with local officials for further waste disposal regulations.

VIII. MISCELLANEOUS

Available in 5 gallon pails and 55 gallon drums.

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