



PC-5009 Pattern Cleaner

DESCRIPTION

PC-5009 is an acidic, liquid concentrate. It is used to clean copper clad laminate prior to the pattern plating process. It contains a concentrated blend of acids and surfactants developed and designed to remove and dissolve surface films normally found during pattern plating. It contains no ammonia, chelators or solvents.

PC-5009 will remove light oils, fingerprints, adhesion promoter residues and light copper oxides from imaged panels, leaving an active, bright surface for electroplating. **PC-5009** is designed to be easily rinsed from copper surfaces and is formulated not to attack electroless copper or properly developed photo resists.

OPERATING PARAMETERS

Make-Up	10% to 25% PC-5009 diluted with water
Temperature	90°F to 130°F 32°C to 54°C
Immersion Time	3 to 4 minutes
Process	Batch Tank
Agitation	Will speed cleaning action
Ventilation	Advised
EQUIPMENT	
Tanks	Polypropylene, Polyethylene
Racks/Baskets	Plastisol Covered Steel, Stainless Steel
Heaters	Quartz, Stainless Steel, Teflon Coils

PHYSICAL PROPERTIES

Appearance	Amber Liquid
Smell	Acidic Odor
Density	1.19-1.24 g/cc
pH	<1.0
Flash Point	>500F



CONTROL PROCEDURES

Replenishments can be made to **PC-5009** working solution. When the total volume of additions equals the initial make-up concentration, the solution should then be replaced.

ANALYSIS

PC-5009 PERCENT CONCENTRATION

REAGENTS AND EQUIPMENT NEEDED

1.0 Normal Sodium Hydroxide Solution
Methyl Orange Indicator Solution
10 ml pipette
250 ml Erlenmeyer Flask

PROCEDURE

1. Pipette 10 ml of the working solution into a 250-ml Erlenmeyer flask.
Dilute with 100 ml of de-ionized water.
2. Add 3 to 4 drops of methyl orange indicator and titrate with 1.0 Normal sodium hydroxide to a yellow endpoint, record volume titrated.
3. Calculation:

$$\% \text{ PC-5009} = (\text{ml NaOH}) \times (\text{N NaOH}) \times 2.5$$

SAFETY AND STORAGE

PC-5009 is an acidic solution containing inorganic and organic acid. 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 **PC-5009** in its original container. Keep away from direct sunlight and temperature extremes. Protect from freezing.

WASTE TREATMENT

PC-5009 contains organic and inorganic acids. 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 **PC-5009** 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.

MISCELLANEOUS

Available in 5-gallon pails and 55 gallon drums.