



## Product Bulletin

Better Chemistry. **Better Business.**

### Cleaner PC-1

**Product Code: 2704001**  
**Revised Date: 07/19/2006**

### Cleaner PC-1

Acidic Cleaner For Printed Circuit Industry

**Cleaner PC-1** is a water soluble liquid acidic cleaner formulated for removing light oils, oxides, finger prints, and resist residues from the circuit boards prior to copper plating or printing.

**Cleaner PC-1** will not dissolve copper per se, but just the oxides of copper. Consequently, the immersion time in the **CLEANER PC-1** is not a critical factor in this regard.

### ADVANTAGES

1. Stable product - long life.
2. No odors or fumes given during use.
3. Biodegradable surfactant system.
4. Performs in water at various hardness levels.
5. Wide operating temperature range.
6. No ventilation required when used.
7. Readily soluble in cold water.

### OPERATING CONDITIONS

Concentrations: 5 to 15% (vol).  
Temperatures: room to 150F. (66C)

The operating temperatures are dependent upon the soil and immersion time. For most applications the operating temperatures may fall between 110-120F (43-49C).

Time: 2 to 10 minutes.  
Equipment: Tanks may be constructed of pvc, polypropylene, fibreglass or stainless steel.  
Heaters: Stainless steel or quartz.

### CONTROL

1. Pipette a 10 ml sample of **Cleaner PC-1** solution into a 250 ml erlenmeyer flask.
2. Add 50 mls of water to the erlenmeyer flask.
3. Add 3 to 4 drops phenolphthalein indicator.



## Product Bulletin

Better Chemistry. **Better Business.**

### Cleaner PC-1

**Product Code: 2704001**  
**Revised Date: 07/19/2006**

4. Swirl flask to insure mixing.
5. Titrate with 1.0 N sodium hydroxide until the solution turns pink.
6. Record mls 1.0 N sodium hydroxide used.

**% (vol) Cleaner PC-1 = .93 x mls 1.0 N Sodium Hydroxide Used**

### TEST KIT PROCEDURE

Factor (% by volume) - 1.30

Use 1/2 ml sample and fill bottle 1/4 full of water, 2 - 3 drops of indicator.

**Concentration Cleaner PC-1 = Factor (1.30) x Drops N-72 Solution**

### CAUTION

**Cleaner PC-1** is an acidic product and should be handled accordingly. Avoid skin, eye and oral contact. Wear protective clothing, gloves and goggles when handling the product. Flush exposed areas immediately with clean, cold water. Contact a doctor immediately in case of injury.

### WASTE DISPOSAL

Neutralize solutions of **Cleaner PC-1** to a pH between 6 to 8 with either soda ash, lime or caustic soda. Discharge the neutralized solution to sewer or settling lagoon. Copper must be removed from used solutions by raising the pH sufficiently to precipitate copper as hydroxide. Copper salts cannot be discharged to sewer.

### WARRANTY

THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.