

PROCIRC 963

ACTIVATOR

INTRODUCTION

Procirc 963 Activator has been formulated as an integral part of the Cirkgold SMD system for electroless nickel and immersion gold plating of printed circuit boards for surface mount devices. Procirc 963 Activator is a palladium based material for activating copper surfaces before electroless nickel plating. The use of 963 Activator ensures complete and uniform nickel coverage.

BENEFITS

- Dilute solution economic to use.
- Zero activation of non-conductors.
- Complete catalysation of copper surfaces.

SOLUTION MAKE-UP

Procirc 963 Activator	150 ml/l
Hydrochloric acid (S.G. 1.16)	150 ml/l
Deionised water	700 ml/l

OPERATING DATA

Temperature	25 - 35 deg C (Optimum 30 deg C).
Time	45 - 120 seconds (Optimum 1 min).
Agitation	Gentle work movement.

EQUIPMENT

Tanks	Polypropylene or PVC.
Heaters	PTFE or silica sheathed immersion with thermostatic control.

INSTALLATION

It is essential that the tanks to be used for Procirc 963 Activator are thoroughly cleaned and leached before any chemistry is introduced.

Contact PMD (UK) Limited Technical Department for appropriate procedure.

1. Fill the clean empty tank with the appropriate volume of water.
2. Slowly add the appropriate volume of hydrochloric acid and mix thoroughly.
3. Add the appropriate volume of Procirc 963 Activator and mix thoroughly.
4. Heat to operating temperature.

PROCESS SEQUENCE

1. Procirc SP264 Acid Cleaner.
2. Rinse.
3. Rinse.
4. Procirc 921 Microetch.
5. Rinse.
6. Rinse.
7. 10% v/v sulphuric acid.
8. Rinse.
9. Rinse.
10. Procirc 963 Activator.
11. Rinse.
12. Rinse.
13. Procirc 964 Electroless Nickel.
14. Rinse.
15. Rinse.
16. Cirkgold 965 Immersion Gold.
17. Drag out.
18. Rinse.
19. Dry.

MAINTENANCE AND CONTROL

The solution should be maintained within the following concentrations:-

Procirc 963 Activator	100 - 150 ml/l
Hydrochloric acid (S.G. 1.16)	130 - 170 ml/l

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The solution does not have an indefinite life as copper contamination and

other decomposition products will increase with age. Whether these reach harmful levels will depend on the mode of operation and the degree of drag out. As a rough guide the solution should be replaced when each litre has processed 3 sq.m. of copper surface area.

ANALYSIS METHODS

Procirc 963 Activator Concentration

The 963 Activator concentration can be measured by analysing for palladium using atomic absorption spectrophotometry. 0.1 g/l palladium is equivalent to 100 ml/l 963 Activator.

Hydrochloric Acid Concentration

Reagents

1.0N sodium hydroxide (standard volumetric solution).
Phenolphthalein indicator.

Method

1. Pipette 5 ml of working solution into a 250 ml conical flask.
2. Add approximately 100 ml DI water and 2 - 3 drops of phenolphthalein indicator. Mix thoroughly.
3. Titrate with 1.0N sodium hydroxide to a pink end point.
4. Record titre = t ml.

Calculation

$t \times 20.0 = \text{ml/l hydrochloric acid (S.G. 1.16)}$.

NOTES

Rinsing after treatment in Activator 963 should be thorough, but not excessive, to prevent drag-in of palladium into the electroless nickel system.

DISPOSAL

Dispose of in accordance with local authority requirements.

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PRODUCT FAMILIES

The following products or product families are referred to in this data

sheet:-

<u>Product Name</u>	<u>Product Number</u>
Procirc 963 Activator	967001
Procirc SP264 Acid Cleaner	907004
Procirc 921 Microetch	923001
Procirc 964 Electroless Nickel MU	967002
Cirgold 965 Immersion Gold	965001

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