

# Marshal EN 804

## Technical Data sheet

EN 804 is highly stable room temperature electroless nickel plating system designed for ABS Plastic Plating. EN 804 produces uniform fully covered porous free deposit over activated ABS plastic.

EN 804 offers distinct advantages over conventional medium phosphorus plating processes;

- ❖ Faster disposition rates
- ❖ Pore Free, uniform deposits
- ❖ Stable formulation, no deposition on tanks and racks.

EN 804 is supplied in three liquid concentrates A,B, The formulation is suitable adjusted to maintain operating pH.

### Replenishments

In order to achieve best performance it is necessary to maintain the constituents in operating range. The best way of replenishments is always by analysis. However the replenishments may be made by assumed deposition rate and thickness.

For every 1 sq.ft per 15 microns of deposit add;

50 ml EN 804 A  
50 ml EN 804 B

### Operating Parameters

| Sr. | Parameter    | Min         | Max         |
|-----|--------------|-------------|-------------|
| 1   | Ni Metal     | 2.5 gms/Lit | 3.0 gms/Lit |
| 2   | pH           | 9.50        | 10.50       |
| 3   | Temperature  | 20 Deg C    | 35 Deg C    |
| 4   | Process time | 15 min      | 30 min      |

Control :

Since Electroless Nickel plating is influenced by pH it is mandatory to maintain the pH range. As the bath ages we recommend to keep the pH on higher side of the range.

### Tanks and heating systems:

Polypropylene or PP lined SS tanks are most suitable for EN 804 process. In order to avoid decomposition of the electroless nickel bath, ensure mild air agitation. Remove any fine deposits, should it occur in the tank by using Nitric Acid.

### Filtration:

It is always preferred to use continuous cartridge filtration in order to get maximum life of the bath.

### Storage:

EN 804 concentrates, presents no problem under normal condition. The products should not be stored below 10 C. In the event of crystallization due to lower temperature, immerse the container in warm water. Stir the contents to ensure a homogenous mixture before use. Maximum storage temperature is 40 C.

## **Analytical Measures of EN 804Bath**

### **Estimation Of Nickel Content:**

1. Take 5 mls of the bath solution.
2. Add 50 mls of distilled water plus a few drops of ammonia.
3. Add few grains of Murexide indicator.
4. Titrate using 0.10 Molar EDTA solution to purple end point.

Calculation :

$$\text{ml. titrated} \times \text{M E.D.T.A.} \times 11.738 = \text{g/l Ni}$$

**To raise 1 gm/lit Ni add 20 ml/lit EN 804A**

### **5.HEALTH & SAFETY:**

EN 804 A and EN 804 B concentrates are alkaline, the normal precaution when handling chemicals should be followed. Do not take internally and wear face masks and protective clothing when handling them