



SOLDERTEC 100

Bright Acid Tin

INTRODUCTION

Soldertec 100 is a sulphate based bright tin plating process, suitable for technical and decorative applications. Soldertec 100 can be used for rack and barrel plating of connectors and other related components.

BENEFITS

- Fully bright deposits.
- Excellent solderability.
- High ductility.
- Wide current density range - excellent bright throwing power.
- Low tendency to Sn^{4+} formation.

SOLUTION MAKE -UP

Sulphuric acid	100 ml/L
Stannous sulphate	22.5g/L
Soldertec 100 Part A	30ml/L
Soldertec 100 Part B	1ml/L
Soldertec 100 Part C	5ml/L

1. Clean the process tank with water and leach the tank with sulphuric acid (2%) overnight pumping through all filters, pumps and pipework. Pump out acid and rinse thoroughly with water.
2. $\frac{1}{2}$ fill the tank with cold deionised water.
3. Slowly add sulphuric acid with continuous stirring.
4. Add stannous sulphate with continuous stirring.
5. Add DI water to 90% of final volume.
6. Allow to cool to 20-23°C
7. Add Soldertec 100 Parts A, B and C with stirring.
8. Top up with deionised water and stir thoroughly.

OPERATING DATA

	Optimum	Range
Stannous sulphate (g/L)	22.5	18 - 38
Sulphuric acid (ml/L)	100	90 - 110
Temperature (°C)	21	16 - 27
Cathode current density (A/dm ²)	2 1	0.5 – 4.0 (Rack) 0.5 – 3.0 (Barrel)
Agitation	Cathode movement 1 – 3m/min or barrel rotation	
Deposition rate	1µm/min at 3 asd	

EQUIPMENT

Tanks	Polypropylene, polyethylene or PVC.
Heaters	PTFE or titanium immersion with thermostatic control.
Cooling	PTFE or titanium coils.
Filtration	Continuous through 5µm polypropylene cartridges, 3 turnovers per hour.
Extraction	Recommended
Anodes	Pure tin to BS 1468 in titanium baskets.

MAINTENANCE AND CONTROL

The stannous tin and sulphuric acid concentrations should be analysed regularly using the methods detailed in the Data Sheet.

Soldertec 100 Part A	700 – 900 ml/1000Ahr
Soldertec 100 Part B	50 – 100 ml/1000Ahr
Sodertec 100 Part C	150- 250 ml/1000Ahr

Post Treatment For optimum solderability a post plate rinse with Neutra Aid 68 is recommended before final rinsing and drying.

ANALYSIS METHODS

1. Stannous sulphate

Reagents

Concentrated hydrochloric acid.
Sodium bicarbonate
Iodine indicator.
0.1N iodine.



Method

1. Pipette 5ml of the plating solution into a 250ml conical flask.
2. Add 5ml conc hydrochloric acid
3. Add approximately 100ml deionised water.
4. Add 1-2g sodium bicarbonate
5. Add a few drops iodine indicator.
6. Titrate with 0.1N iodine to a permanent blue end point.
7. Record titre = t mls.

Calculation

$t \times 2.13 = \text{g/L Stannous sulphate.}$

2. Sulphuric acid

Reagents

4% Ammonium oxalate (Dissolve 40g of Ammonium oxalate in deionised water and dilute to 1 litre)
1.0N Sodium Hydroxide
Methyl Red Indicator

Method

1. Pipette 5ml of the plating solution into a 250ml conical flask.
2. Add 100 ml of 4% Ammonium oxalate.
3. Add 5 drops Methyl red indicator
4. Titrate with 1.0N sodium hydroxide mixing thoroughly during additions to a yellow end point.
5. Record titre = t mls.

Calculation

$t \times 5.56 = \text{ml/L sulphuric acid.}$

DISPOSAL

Dispose of through an approved specialist contractor.



PRODUCT FAMILIES

The following products are referred to in this data sheet.

PRODUCT NAME	PRODUCT NUMBER
Soldertec 100 Part A	577018
Soldertec 100 Part B	577019
Soldertec 100 Part C	577024
Neutra Aid 68	206035

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