



SOLDERTEC 200

Bright Acid Tin

INTRODUCTION

Soldertec 200 is a sulphonic acid based bright tin plating process, suitable for technical and decorative applications. Soldertec 200 can be used for rack, barrel and vibratory 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

Component	Barrel	Rack	Vibratory
Tin methane sulphonate solution (ml/L)	33.3	66.7	23.3
Methane sulphonic acid (ml/L)	150	150	150
Soldertec 200 Carrier (ml/L)	80	80	100
Soldertec 200 Brightener (ml/L)	5	5	5
Soldertec 200 Additive (ml/L)	10	10	10

1. Clean the process tank with water and leach the tank with methane sulphonic acid (3-5%) 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. Add methane sulphonic acid with continuous stirring.
4. Add tin methane sulphonate with continuous stirring.
5. Add Soldertec 200 Carrier and Brightener with stirring.
6. Add Soldertec 200 Additive with stirring
7. Top up with deionised water and stir thoroughly.



OPERATING DATA

	Barrel	Rack	Vibratory
Stannous tin (g/L)	6 – 15 (10)	15 – 25 (20)	6 – 10 (7)
Methane sulphonic acid (ml/L)	100 – 200	100 – 200	100 - 200
Temperature (°C)	20 - 25		
Cathode current density (A/dm ²)	0.25 – 1.0 (0.5)	1 – 4 (2)	0.4 – 1.0 (0.5)
Agitation	Cathode movement 1 – 3m/min or barrel rotation		
Deposition rate	1µm/min at 2 asd		

EQUIPMENT

Tanks	Polypropylene, polyethylene or PVDC.
Heaters	PVDF 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 methane sulphonic acid concentrations should be analysed regularly using the methods detailed in the Data Sheet.

	Rack and Barrel	Vibratory
Soldertec 200 Carrier	300 – 500 ml/1000Ahr	200 – 400ml/1000Ahr
Soldertec 200 Brightener	50 – 100 ml/1000Ahr	25 – 50ml/1000Ahr
Soldertec 200 Additive	20 – 40 ml/1000Ahr	10 – 20 ml/1000Ahr

During idle periods the bath should be continuously filtered. After extended shut down (>5 days) an addition of 1 – 1.5ml/L Soldertec 200 Brightener may be required.

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



ANALYSIS METHODS

1. Stannous tin

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

$t \times 1.187 = \text{g/L tin.}$

Replenishment

For every 1g/L tin low, add 3.3ml/L Tin methane sulphonate (300g/L)

2. Methane sulphonic 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 10ml 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

$t \times 10.15 = \text{ml/L methane sulphonic acid.}$

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 200 Carrier	577015
Soldertec 200 Brightener	577016
Soldertec 200 Additive	577017
Neutra Aid 68	206035

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