



STANNOLITE MW

A Matt Tin Plating Process for Wire Finishing
Applications

Process No 80100

Stannolite MW is a methane sulfonic acid (MSA) based tin plating process specifically formulated for wire plating applications. The additive components are stable under conditions encountered in state of the art wire plating equipment and will produce a consistent, light colored, fine grained deposit over a wide current density range. Low organic inclusion ensures excellent solderability and reflow performance.

Solution Preparation

100 % Tin Process

	Low Speed (100 – 500 asf)		High Speed (500 – 2000 asf)	
To make	1 Liter	100 US Gal	1 Liter	100 US Gal
Methane Sulfonic Acid (70%) InnoChem Part # 17055	100 ml	10 gal	100 ml	10 gal
Tin Methane Sulfonate (400 g/L) Innochem Part # 24055	125 ml	12.5 gal	250 ml	25 gal
Stannolite MW Additive InnoChem Part # 80010	100 ml	10 gal	100 ml	10 gal
DI Water	675 ml	67.5 gal	550 ml	55 gal
Note: Stannolite MW is formulated for tin plate installations, if used in a tin-lead process, a second additive, Stannolite MWS (product 80200), is recommended for alloy control. Please contact your InnoChem representative for details.				

Solution Composition

100% Tin Process

	100 – 500 asf				500 – 2,000 asf			
	Optimum		Range		Optimum		Range	
	g/l	oz/gal	g/l	oz/gal	g/l	oz/gal	g/l	oz/gal
Stannous Tin	50	6.7	40-60	5 - 8.0	100	13.3	80-120	11 -16
Free Acid	95	12.7	80-110	11 -15	95	12.7	80-110	11 - 15
Total Acid	176	23.4	160 - 200	21 - 27	257	34.3	230 - 280	31 - 37

Make-Up Procedure

1. Add one half of the required volume of DI water to the plating tank.
2. Add the required amount of methane sulfonic acid and mix thoroughly.
3. Add the required amount of tin methane sulfonate. Mix until uniform.
4. Increase the solution temperature to the recommended operating level and, with stirring, slowly add the Stannolite MW additive. Mix thoroughly.
5. Bring to the final volume with DI water and mix until uniform.

Operating Conditions

Temperature	40-60°C (104-160°F), 49°C(120°F) optimum
Anode:Cathode Ratio	3:1 recommended
Anode Current Density	2.0 amp/dm ² (20 amp/ft ²) max
Cathode Current Density	5 -220 amp/dm ² (46 - 2000 amp/ft ²)
Cathode Agitation	Vigorous solution / cathode movement
Anodes	High purity tin

Solution Maintenance

The quantities of Methane Sulfonic Acid and Tin Methane Sulfonate required to maintain optimum process efficiency is determined by chemical analysis of the plating solution.

The InnoChem MW additive is a primary grain refiner that is consumed by both electrolysis and drag-out. Replenishment in a typical wire plating machine is in the range 300 – 500 ml /1,000 amp hour.

Analytical procedures can be obtained from InnoChem Inc.

Equipment

Tanks:

Polypropylene, polyethylene, PVC or similar acid resistant materials are suitable materials of construction. Welded tanks are preferred to molded units because of the tenacity of mold release agents. Prior to use, tanks should be leached for 24 hours with a 10% MSA solution.

Filtration:

A filtration rate of 3 to 5 bath turnovers each hour is recommended. Filter cartridges or cloths should be 10 micron Dynel or polypropylene. Pumps should have no metallic parts in contact with the solution.

Heaters:

Teflon /quartz immersion heaters, or Teflon /Teflon coated steam are most suitable.

Anodes:

Soluble or insoluble anodes can be used with the Stannolite MW process. If tin slugs are used in conjunction with titanium baskets, care must be taken to keep the baskets full at all times to prevent attack on the basket material. Anode bags of polypropylene or Dynel should be leached in 5% MSA prior to use to remove residual sizing.

Rectifiers:

DC power supply should have less than 5% ripple.

Safety

Stannolite MW process is highly acid in nature therefore it is recommended that all Innochem Material Safety Data Sheets be read prior to bath make-up and operation.

Waste Disposal

Waste from the Stannolite MW Process must be disposed of in accordance with all applicable federal, state and local regulations and permits.

Ordering Information

17055	Innochem Methane Sulfonic Acid	55 gal
24055	InnoChem Tin Methane Sulfonate	55 gal
24005	InnoChem Tin Methane Sulfonate	5 gal
80105	InnoChem Stannolite MW Additive	5 gal
80155	InnoChem Stannolite MW Additive	55 gal