Product Information Data Sheet

Liquid Tin (MG Cat. No. 421)

PRODUCT DESCRIPTION

Liquid Tin is a clear immersion tin designed and formulated to coat a copper substrate or solder deposit with a dense tin deposit. This deposit is readily solderable with a long shelf life. The tin deposit owes its outstanding corrosion protection to its dense coating and absence of co-deposited organics. Liquid Tin will clean solder deposits and render the surface active and bright, ensuring good solderabilty. It has the benefit of:

- High metal concentration (4 oz./gallon)
- Clear solution even at room temperature
- Dense tin deposit, long shelf life
- Residues are free rinsing
- Very stable solution

SOLUTION MAKE-UP

Liquid Tin is used at full strength and therefore requires no mixing or dilution.

OPERATING CONDITIONS

	Nominal	**Range**
Activity	100%	10–120%
Temperature	27°C (80°F)	21–60°C (70–140°F)
Time	5 min.	1–10 min.
Deposition rate	10 µin/min.	3-22 µin/min.
Agitation	constant mechanical	

RECOMMENDED PROCESS CYCLE

Copper:

1. Clean board
2. Rinse
3. Liquid Tin
4. Warm water rinse
5. Deionized water rinse
6. Dry

The treatment of solder plated parts requires no pre-cleaner, except in cases of severe contamination of the surface. In these cases, an alkaline soak cleaner, acid soak cleaner, or a proprietary solder cleaner may be used.

Product Information Data Sheet

Liquid Tin (MG Cat. No. 421)

BATH OPERATION AND MAINTENANCE

Liquid Tin may be used until the activity drops to about 1 0%. Volume lost due to evaporation should be replaced with D. I. water. Chemical replenishment of Liquid Tin solutions is not recommended.

EQUIPMENT

Liquid Tin solutions should be used with equipment constructed of polypropylene, polyethylene, Teflon® similar materials. Do not use stainless steel. Heaters should be Teflon ® or quartz.

WASTE TREATMENT

A spent solution should be diluted by at least 50 percent with tap water. Add 10 grams per liter ferrous sulfate and mix until totally dissolved. Then adjust pH to 8.5 with dilute sodium hydroxide. Allow the resulting precipitate to settle, and dispose of the supernatant liquid and precipitate in accordance with all applicable federal, state and local regulations.

SAFETY

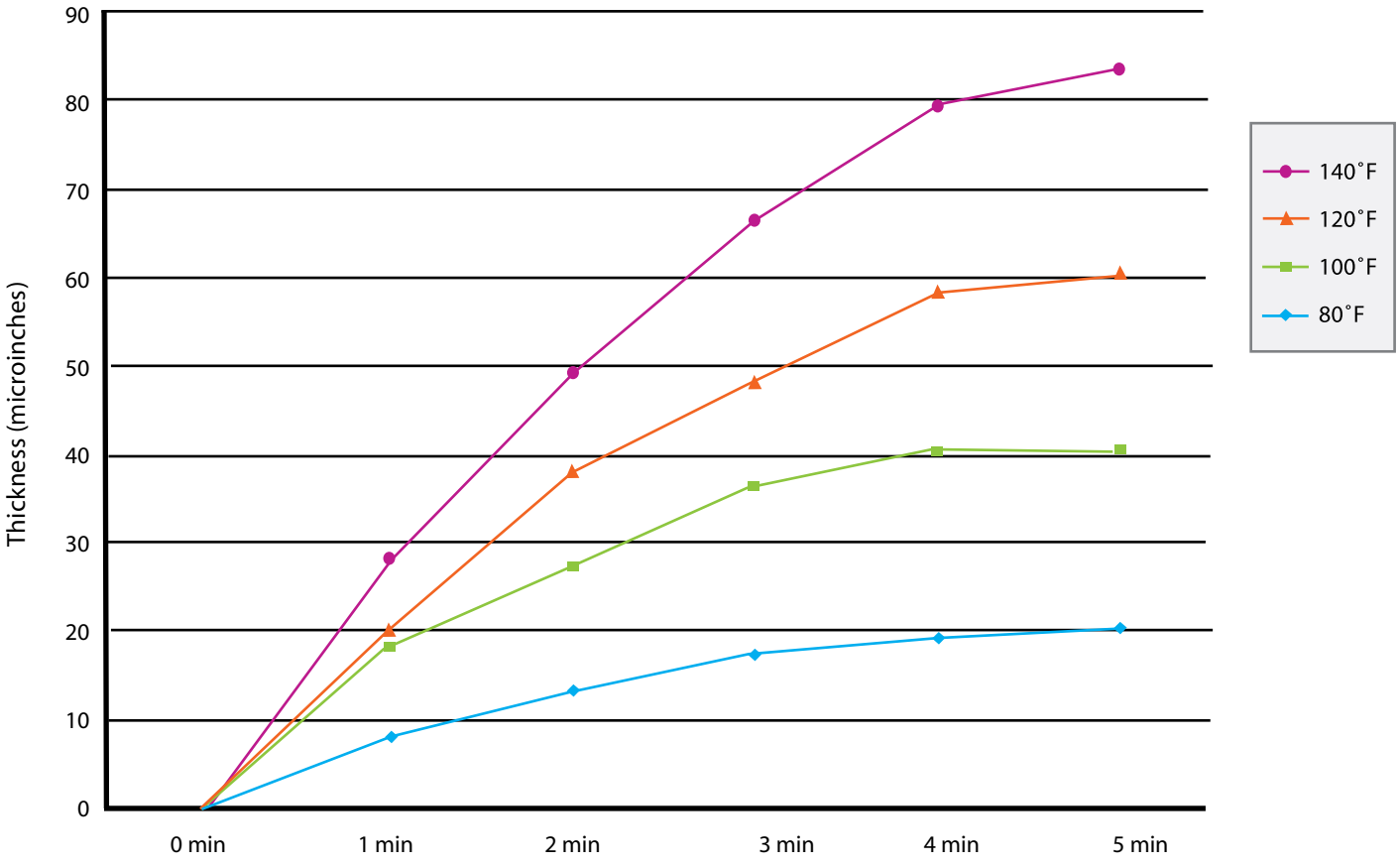
Liquid Tin solutions are strongly acidic. Normal caution such as the use of safety goggles, rubber gloves, etc., should be exercised during handling. Avoid breathing vapors. In the event of eye contact, flush with copious amounts of water and CONTACT A PHYSICIAN.

Consult the Material Safety Data Sheet for safety, health and environmental information. Liquid Tin can be operated until the percent activity reaches 10%.

Product Information Data Sheet

Liquid Tin (MG Cat. No. 421)

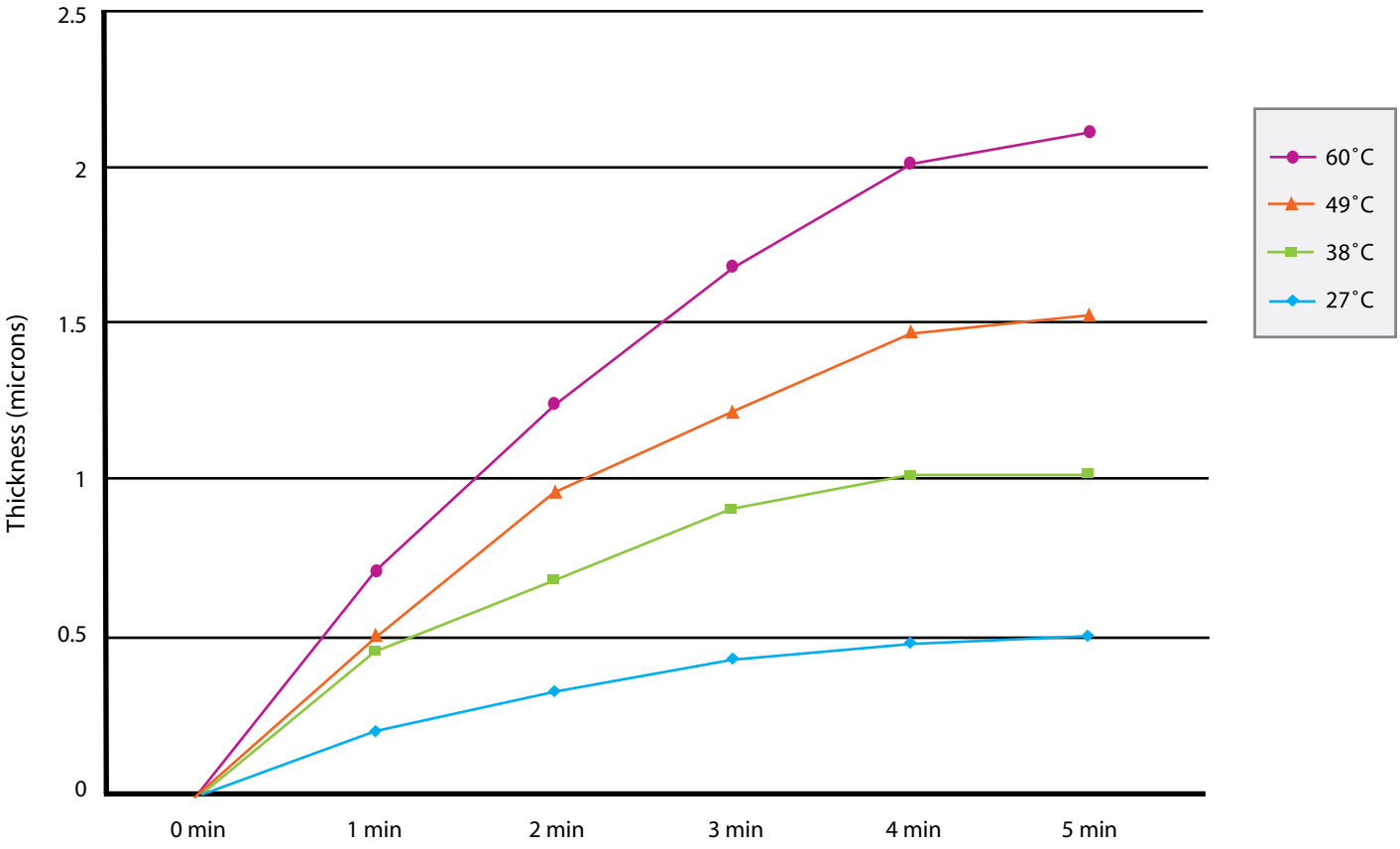
Deposition Rate



Product Information Data Sheet

Liquid Tin (MG Cat. No. 421)

Deposition Rate



Product Information Data Sheet

Liquid Tin (MG Cat. No. 421)

ANALYTICAL

Procedure Number: AP.0532.d

I. Procedure Description: Titrimetric method measuring the percent activity of Liquid Tin.

II. EQUIPMENT & SETTINGS

A. 5.0 mL class "A" pipette

B. 50.0 mL burette

C. 250 mL Erlenmeyer flask

D. 25 mL graduated cylinder

Ill. REAGENTS

A. pH 5 acetate buffer - To 245 grams of sodium acetate trihydrate, add 58 mL of Glacial Acetic Acid. Dilute to 1 liter with Dl water.

B. Methylthymol blue indicator - Dissolve 0.1 gram of mdhylthymol blue indicator powder in 50 mls of D.I. water.

C. 0.1 0 M EDTA - Weigh 36.324 g of disodium EDTA dihydrate. Dissolve in, 1 liter volumetric fiask with Dl water.

IV. PROCEDURE

A. Pipette a 5 mL of sample of working bath into a 250 mL Erlenmeyer flask, and add about 75 mL of D.I. water.

B. Add 25 mL of pH 5 acetate buffer.

C. Add I 0 drops of methylthymol blue indicator

D. Titrate with 0.1 0 M EDTA to a faint yellow endpoint

E. Record the result

V. CALCULATIONS

A. Percent Activity Liquid Tin = (mL 0.10 M EDTA used) x (M EDTA) x (85.9)