421A

LIQUID TIN

421A is a clear yellow immersion tin solution designed to coat copper traces and solder deposits with a thick coating layer of tin. The deposited tin is readily solderable and it extends the work life of circuits by protecting it from corrosion. The pure tin deposit provides excellent corrosion resistance, which is free of co-deposited organics. 421A ensures good solderability for solder deposits by cleaning them and by making their surface bright and active.

Features and Benefits

- No dilution required
- High tin concentration
- Rinsable residues
- Good adhesion

Usage Parameters

Immersion Time	7 to 10 min
Deposition Rate	0.6–1.0 µ/7 min
Constant Service Temperature	21 to 60 ˚C
Shelf Life	2 y

Available Packaging

Cat. No.	Packaging	Net Volume	Net Weight
421A-125ML	Bottle	125 mL	140 g
421A-500ML	Bottle	475 mL	532 g

Physical Properties

Color	Clear yellow
Odor	Slight sulfur
Viscosity (Ford Cup 2)	10 s
pH	<1
Tin Metal	21.5 g/L
Activity	100%
Density	1.25 g/mL

Contact Information

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Application Instructions

For industrial use only. Read the product's SDS before using it (downloadable at www.mgchemicals.com).

Materials and Equipment

The liquid tin should be used with equipment made of polypropylene, polyethylene, Teflon, or similar materials. DO NOT use stainless steel. Heaters should be made of Teflon or quartz.

Reagent

- Deionized (DI) water
- Tap water

To tin copper or solder deposits:

Dilution is not required. Volume lost due to evaporation can be replaced with DI water. Chemical replenishment is not recommended.

1. Clean the board.
2. Rinse cleaning residues with water.
3. Immerse in liquid tin for the duration corresponding to the thickness you need.
4. Rinse with warm water.
5. Rinse with DI water.
6. Dry.

Analytical Procedures

Titrimetric method measuring the percent activity of Liquid Tin (procedure # AP.0532.01).

Materials and Equipment

- 5.0 mL class "A" pipette
- 50.0 mL burette
- 250 mL Erlenmeyer flask
- 25 mL graduated cylinder
- 2 x 1 L volumetric flasks

Reagent

- pH 5 acetate buffer—Weigh 245 g of sodium acetate trihydrate, add 58 mL of Glacial Acetic Acid. Dilute to 1 L with DI water in 1 L volumetric flask.
- Methylthymol blue indicator—Dissolve 0.1 g of methylthymol blue indicator powder in 50 mL of DI water.
- 0.10 M EDTA—Weigh 36.324 g of disodium EDTA dihydrate. Dissolve in 1 L volumetric flask with DI water.

To titrate the tin plating solution:

1. Pipette 5 mL sample of working bath into a 250 mL Erlenmeyer flask and add about 75 mL of DI water.
2. Add 25 mL of the pH 5 acetate buffer.
3. Add 10 drops of methylthymol blue indicator.
4. Titrate with 0.10 M EDTA to a faint yellow endpoint.
5. Record the results.

Calculation

Percent Activity Liquid Tin =

(mL 0.10 M EDTA used) x (M EDTA) x (85.9)

Storage and Handling

Store between 10 and 30 ˚C in a clean dry area (see SDS).

Disclaimer

This information is believed to be accurate. It is intended for professional end users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.