Hubbard-Hall
Chemical Services Since 1849

Product Bulletin

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SUPERTHRUST HIGH THROW

(ACID COPPER PROCESS)

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The **SUPERTHRUST HIGH THROW** acid copper process is specifically formulated for acid copper electroplating of through-hole printed circuit boards. The **SUPERTHRUST** process utilizes a single addition agent, which is composed of extremely stable organic components. Consequently, no harmful breakdown products are formed during operation or downtime periods even when the bath is subjected to air agitation.

The **SUPERTHRUST** process is formulated to give an "equiaxial" type deposit with excellent ductility, brightness, and thermo shock characteristics thus minimizing hole wall separation problems.

SOLUTION COMPOSITION

	RANGE	TYPICAL
Copper Sulfate	8-10 oz/gallon	9 oz/gallon
Sulfuric Acid	8-12% by volume	10% by volume
CL ION 30-80 ppm	40 ppm	
SUPERTHRUST	0.5% by volume	
Temperature	70-80°F.	75°F.
Current Density (Cathode)	20-40 ASF	
Current Density (Anode)	10-20 ASF	
Agitation	Low Air Pressure	
Filtration	Continuous – 2 to 4 turnovers per hour	

SUPERTHRUST is a single addition agent whose average consumption rate is 1 qt/ 4,000 ampere-hours. For optimum results, **SUPERTHRUST** should be added using an automatic brightener feeder. If a brightener feeder is not available frequent additions are recommended.

FILTRATION: Continuous filtration is required to operate the **SUPERTHRUST** acid copper process. At least 2 turnovers per hour is recommended.

EQUIPMENT REQUIREMENTS

Tanks: A lined steel tank is recommended. Rubber or plastic linings of the type approved by Hubbard-Hall are suitable.

Anodes: 0.04-0.06% phosphorized copper

Anode Bags: Dynel or Polypropylene

Anode Hooks: Titanium

Filters: Lined with a material suitable for use with acid copper plating solutions.

Coils: Teflon, Titanium or Graphite
SOLUTION PREPARATION

Fill treatment tank 2/3 full with water and heat to 120-140°F.

1. Add the required quantity of copper sulfate and stir until all solids have dissolved.
2. Cool to room temperature.
3. Slowly and cautiously, wearing protective gloves, glasses, and clothing, add the required quantity of C.P. grade sulfuric acid (SP.GR. 1.84). Mix thoroughly.
4. Add 1.0 pint / 100 gallons 35% hydrogen peroxide and stir at a temperature of 140°F. for 1 hour.
5. Add 3lbs/100 gallons activated copper and mix for 2 hours.
6. Cool and allow to settle.
7. Analyze and adjust if necessary.
8. Filter the solution into the thoroughly cleaned plating tank.
9. Electrolyze the bath for 6-10 hours at 10-20 ASF to film the anodes.
10. Add the required quantity of SUPERTHRUST addition agent.
11. Mix thoroughly and commence plating.

SULFURIC ACID WARNING

Sulfuric acid is a corrosive acid and can cause severe burns. Wear protective glasses, gloves and clothing. In case of skin and eye contact, flush exposed areas with water for at least 15 minutes. In case of eye contact, also seek qualified medical attention.

HANDLING PRECAUTIONS

Proper handling information is labeled on all Hubbard-Hall products. All personnel using subject products should familiarize themselves with these instructions before use.

WARRANTY

THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.