Product Bulletin
Product Name: Microetch 6075
Product Code: 2703003
Revision Date: December 21, 2023

Microetch 6075

Microetch 6075 is a powdered material, which is simply mixed with DI water and sulfuric acid to make up the operating solution. The Microetch 6075 solution is used in printed circuit processes for deoxidizing copper and for producing a mild etch on the surface prior to electroless plating.

Microetch 6075 provides a clean, uniformly etched copper surface and prepares the printed circuit boards for activation and electroless plating. It is designed as a substitute for ammonium persulfate and other proprietary products containing ammonium compounds. It is simple to make up and requires no elaborate control procedures.

Features & Benefits

100% active	Smaller inventory footprint
High purity	Consistent performance, lower rejects; higher productivity
No ammonia compounds	Low impact on waste-water treatment; lower total cost to use

Operating Conditions

Temperature	70°F – 85°F
Immersion time	As required
Concentration	8 – 12 oz/Gal (see control section)

Make-Up

1. DI water — amount necessary to reach operating volume
2. Microetch 6075 — 8-12 oz/Gal
3. Sulfuric acid 66 be' — 1/2-1% by volume

To make up the operating solution, fill 3/4 of the tank with DI water. Add 8-12 oz/Gal of the Microetch 6075 powder. Add 1/2-1% by volume sulfuric acid. Bring the solution to final volume with DI water.

Operation
After normal cleaning and rinsing, the printed circuit boards are simply immersed in the Microetch 6075 operating solution for the necessary period. Longer immersion times will be necessary when the solution is operated at the lower end of the temperature range. Increased temperatures will reduce the time. Do not operate the solution above the recommended limit.

Equipment
PVC, Polyethylene, fiberglass, or rubber lined tanks.

Solution maintenance
The operating solution should be maintained at a concentration of 8-12 oz/Gal for daily usage. Specific timetables for additions will be suggested based on total workload per shift.

Titration Method

Microetch 6075 Concentration

Reagents required:
A. 0.1N Potassium Permanganate (KMN04)
B. 0.2N Ferrous Ammonium Sulfate (FESO4 (NH4) SO4 - 6 H20)
preparing Ferrous Ammonium Sulfate solution
78.5 gm Ferrous Ammonium Sulfate
5.0 mL concentrated Sulfuric Acid
distilled water-make one liter
C. 25% (vol) sulfuric acid solution
slowly add 100 mL sulfuric acid to 600 mL distilled water

Procedure:
1. Pipette a 1 mL sample into a 250 mL Erlenmeyer flask.
2. Add 25 mL of DI water.
3. Pipette 10 mL of 0.2N ferrous ammonium sulfate into the flask and wait one minute.
4. Pipette 5 mL of 25% H_2SO_4 into the flask.
5. Titrate with 0.1N $KMNO_4$ to a light pink endpoint.
6. Record the number of mL of $KMNO_4$ used as "a" mL.
7. Perform the same analysis on a blank solution. (i.e. run through steps 2-5)
8. Record number of mL of $KMNO_4$ used as "b" mL.

Calculation

$$Concentration\ (oz/Gal) = (b-a) \times 1.65$$

Sulfuric Acid Concentration

1. Pipette 10 mL of working solution into a 250 mL Erlenmeyer flask and add about 100 mL DI water.
2. Add 2 - 3 drops of Methyl Orange indicator
3. Titrate with a 1.0N Sodium Hydroxide solution to a yellow-green endpoint.
4. Record mL used.

Calculation

Concentration (%/vol) = mL 1.0N NaOH x 0.28

Waste Disposal

Spent solutions must be adjusted to a pH of 7.0 to 10.0 in order to remove the copper metal prior to disposal. Dilute sodium hydroxide (caustic soda) solutions are recommended for this procedure. Consult local authorities for specific regulations concerning discarding of spent material.

Caution

Use only sulfuric acid when making up the operating solution. Use of Hydrochloric Acid will liberate chlorine gas; nitric acid will liberate nitric oxide and nitrogen dioxide gas.

Microetch 6075 and its operating solution are acidic and oxidizing in nature. Avoid contact with reducing agents, alkalis, and solvents, or organic materials such as paper, wood, cloth or sulfur. Avoid all acids other than sulfuric.

Wear rubber gloves, aprons, and safety glasses when handling Microetch 6075 and the working solution. Do not inhale the dust of the Microetch 6075 powder. Wear respirator when handling. In case of contact with the skin or eyes, flush with cold water for 15 minutes and obtain medical attention.

WARRANTY: HUBBARD-HALL INC. IS NOT RESPONSIBLE FOR THE MISUSE, MISAPPLICATION, OR MISHANDLING OF THIS PRODUCT. SEE THE TERMS AND CONDITIONS OF SALE ON OUR WEBSITE FOR ADDITIONAL TERMS AND CONDITIONS CONCERNING OUR PRODUCTS, INCLUDING BUT NOT LIMITED TO, LIMITATIONS AND DISCLAIMERS OF WARRANTIES AND LIABILITIES.

Our People. Your Problem Solvers.

For more information on this process,
please call us at 203.756.5521 or email: techservice@hubbardhall.com

Hubbard-Hall holds certifications for **ISO 9001:2015**, Responsible Distribution, as accredited by the **ACD** (Alliance for Chemical Distributors) and as a **Women-Owned Small Business**, as well as maintaining an association with **Omni-Chem**[136]