



FOCUS TECH PROCESS CHEMICALS

Technical Data Sheet

Focus Tech ME-560 **Copper Microetch**

Product Description

ME-560 is a potassium monopersulfate based microetch. ME-560 provides superior surface topography and extended bath life when compared to generic sodium persulfate microetch.

Physical Properties

Specific gravity: 1.1-1.4
Appearance: white, granular solid
Odor: none

Compatible Materials of Construction

Plastics	PVC, CPVC, PVDF, polypropylene and polyethylene
Metals and alloys	Titanium
Elastomers	EPDM, Viton and Buna-N

Bath Make-Up

30 – 120 g/L μ ETCH ME-560
2% v/v sulfuric acid
Balance DI water

Operating Parameters

Copper loading: 2 - 5 oz/gal (15 – 37.5 g/L)
Dwell time: 1 – 2 minutes
Temperature: 80 °F – 110 °F

Weight Loss Calculation

1. Weigh a copper coupon to the nearest 0.001g (W_i).
2. Process through microetch at standard operating conditions.
3. Dry coupon thoroughly and reweigh (W_f).

Calculation:

$$\text{Microinches removed } (\mu\text{in}) = \frac{(W_i - W_f)}{\text{*Surface area (in}^2\text{)}} \times 7000$$

* Include both sides of coupon i.e. a 3" X 3" is 18 in²

Analytical Procedures

Copper concentration

Materials required:

1. 250 ml Erlenmeyer flask
2. 2 ml pipette
3. 0.1M EDTA
4. 25% ammonium hydroxide
5. methanol
6. PAN indicator

Procedure:

1. Pipette 2 mls of working etchant into the Erlenmeyer flask and add 100 mls of DI water.
2. Add 20 mls of 25% ammonium hydroxide.
3. Add 10 mls of methanol.
4. Add 5 drops of PAN indicator.
5. Titrate with EDTA from purple to a green endpoint.

Calculation:

$$\text{Copper concentration (oz/gal)} = \text{mls 0.1M EDTA used} \times 0.418$$

Analytical Procedures (continued)

ME-560 concentration

Materials required:

1. 250 ml Erlenmeyer flask
2. 2 ml pipette
3. 0.1 N sodium thiosulfate
4. potassium iodide/EDTA solution
To prepare 1 liter in DI water
Dissolve:
100 g potassium iodide
42 g of tetrasodium EDTA
DI water to 1 liter
5. starch indicator

Procedure:

1. Pipette 2 mls of working etchant into the Erlenmeyer flask and add 100 mls of DI water.
2. Add 10 mls of KI/EDTA solution.
3. Titrate with sodium thiosulfate to a yellow/green color.
4. Add 2 mls of starch indicator.
5. Continue titrating from dark purple to a nearly colorless endpoint

Calculation:

ME-560 concentration (g/L) = mls 0.1N sodium thiosulfate used X 8.85

Sulfuric acid concentration

Materials required:

1. 250 ml Erlenmeyer flask
2. 5 ml pipette
3. 1.0N sodium hydroxide
4. methyl orange indicator

Procedure:

1. Pipette 5 mls of working etchant into the Erlenmeyer flask and add 100 mls of DI water.
2. Add 5 drops of methyl orange indicator.
3. Titrate with sodium hydroxide from red to yellow-orange endpoint.

Calculation:

Sulfuric acid concentration (% v/v) = mls 1.0N NaOH used X 0.572

Storage

Store in original containers above 40 °F.

Safety

Avoid contact with eyes, skin and clothing. Wear chemical handler's gloves, goggles and protective clothing when handling. Read and understand Material Safety Data Sheet before using this product.

Notice

The information and recommendations, contained herein, regarding this product are, to the best of our knowledge, true and accurate. We make no guarantee of results because the conditions of actual use are beyond our control. We assume no liability for damages or penalties resulting from the use of this product or following our recommendations. Our recommendations and suggestions for use of this product are not intended to grant license to operate under or infringe any patent.