

# PMD (UK) LTD PROCESS DATA

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**MFS1305-01/03**  
**ISSUE 2**  
**PREV 04/02**

## MFS 1305 MICROETCH

### INTRODUCTION

MFS 1305 Microetch is a highly stable, copper etchant which can be used in all print and etch, pth or inner layer process sequences.

### BENEFITS

Cost effective by consistent controlled etch rate.

Ease of control - etch rate can be varied to suit application.

Versatility - will handle most etching operations in pcb manufacture.

Stable - no excessive exotherm.

Ideal for immersion or spray use.

### SOLUTION MAKE-UP

MFS 1305 Microetch	60 - 120g/L (aqueous)
Sulphuric Acid (1.84 SG)	1% v/v

### OPERATING DATA

Concentration	60 - 120 g/L (aqueous)
Sulphuric Acid (1.84 SG)	1% v/v
Temperature	15 - 30 deg C.
Time	1 - 3 mins (or as required)
Agitation	Not essential
Extraction	Recommended

Copper etch rate:- (Typical figures on laminate copper)

<u>Conc 1305</u> <u>g/L</u>	<u>Etch Rate Micron / Min (Static Immersion)</u>	
	<u>25 deg C</u>	<u>30 deg C</u>
60	0.4	0.55
90	0.62	0.7
120	0.75	0.9

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## **EQUIPMENT**

Tanks	Polypropylene, Unplasticised PVC.
Heating	PTFE or silica sheathed with thermostatic control.

## **INSTALLATION**

It is essential that the tanks to be used for MFS 1305 Microetch are thoroughly cleaned and leached before any product is introduced.

Contact PMD (UK) Limited Technical Department for appropriate procedure.

1. Half fill the clean empty tank with water.
2. Slowly add, with constant stirring, the appropriate volume of sulphuric acid. NB the solution will become warm.
3. Add the appropriate amount of MFS 1305 Microetch and mix until fully dissolved.
4. Make up to operating volume with water and mix thoroughly.
5. Heat the solution to operating temperature.

## **PROCESS SEQUENCE**

MFS 1305 Microetch can be used in all print and etch, pth and inner layer processes, but in general adequate rinsing after processing is essential for optimum results.

## **MAINTENANCE AND CONTROL**

The solution should be discarded when the copper level reaches approximately 15g/L.

## **ANALYSIS METHODS**

### Copper Content

### Reagents

0.1M (0.2N) EDTA (standard volumetric solution)

PAR Indicator

Buffer Solution (Make-up - dissolve 105g sodium acetate and 100ml glacial acid in 1 litre DI water).

### Method

1. Pipette 2 ml of working solution into a 250 ml conical flask.
2. Add approximately 50 ml DI water.
3. Add 20 mls buffer solution and mix thoroughly.
4. Add 4-6 drops of PAR indicator and mix thoroughly.

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## **ANALYSIS METHODS CONTINUED**

5. Titrate with 0.1M EDTA to a definite green colour.
6. Record titre = t mls.

### Calculation

$$t \times 3.175 = \text{g/L copper}$$

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## **DISPOSAL**

Dispose of in accordance with local authority requirements.

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## **PRODUCT FAMILIES**

The following products or product families are referred to in this data sheet.

<u>Product Name</u>	<u>Product Number</u>
MFS 1305 Microetch	923010

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