
AUROMEX[®]

TECHNICAL

INSTRUCTIONS

DATA SHEETS

METROSTRIP AU100 **NON-ELECTROLYTIC GOLD STRIPPER CONCENTRATE**

INTRODUCTION:

METROSTRIP AU 100 gold stripper concentrate is liquid mixture specifically formulated to strip gold from steel, copper, brass, or nickel without the use of electric current. It is capable of removing 0.5-2.0 microns of gold per minute with no attack on the underlying nickel or tin-copper alloy substrate. The exact stripping rate depends on agitation and temperature of the solution.

METROSTRIP AU 100 gold stripper concentrate, when added to water and potassium cyanide, produces a superior gold stripping process. It is specifically designed for the decorative, printed circuit board and electronics industries where protection of the base metal becomes important. By Virtue of its inhibitor, the micro-finish of the base metal will lend itself to rework situations.

METROSTRIP AU 100 has high gold holding capacity, while avoiding crystallization of gold salts.

ADVANTAGES:

- Fast stripping rate, over 1 micron per minute.
- Inhibited formulation. No attack on base metals, (Copper and nickel) when operated in optimum range.
- Ambient temperature operation.
- High gold holding capacity.
- When spent, gold may be easily reclaimed by user.

MATERIAL REQUIRED:

METROSTRIP AU 100 gold stripper concentrate is supplied as liquid concentrate. It is available in 5 and 25 liters drums and is used for both initial make up and subsequent replenishment.

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CHEMICALS CORPORATION

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EQUIPMENT:

Tank	Steel or type 316 stainless steel. Plastic lined tanks may also be used.
Heaters	Steel or stainless steel.
Agitation	Mechanical or solution agitation. Air agitation should not be used.
Ventilation	Recommended.

OPERATION CONDITIONS:

	<u>Range</u>	<u>Optimum</u>
METROSTRIP AU 100 concentrate v/v	10 – 15%	10%
Potassium cyanide g/l	50 – 70	60
Temperature °C	20 – 50	30
Stripping rate	1 micron (40 micro-inches) per minute at 30°C	

MAKE UP PROCEDURES:

1. fill the stripper tank to 70% of final volume with clean tap water.
2. Dissolve 60 g/l of potassium cyanide of final bath volume.
3. Add 1 liter of METROSTRIP AU 100 concentrate for each 10 liters of final bath volume.
4. Dilute to final volume, mix thoroughly. All solids should be dissolved.
5. Once the temperature is raised to within operating range, the solution is ready to use.

REPLENISHMENT AND CONTROL:

It is recommended that the METROSTRIP AU 100 gold stripper concentrate be make up at 10% v/v. As the stripping rate decreases, METROSTRIP AU 100 concentrate and potassium cyanide are added as required to maintain a satisfactory rate. Increments of 20 cc/liters of AU 100 concentrate up to a maximum of 50 cc/liters. At this point the stripper is spent.

ANALYSIS OF FREE POTASSIUM CYANIDE:

Reagents required :

- 10% potassium iodide (KI) indicator solution
- 0. 1N silver nitrate (AgNO₃) solution (standardized)

Procedure :

1. Pipette a 10 mls. sample of the METROSTRIP AU 100 working bath into 250 mls. conical flask.
2. Add 100 mls. of distilled water and 1 ml of KI indicator.
3. Titrate with the standard 0.1N silver nitrate (AgNO₃) reagent until a yellow turbidity indicates the end point.

Calculation :

$$\text{mls. of 0.1 AgNO}_3 \times 1.297 = \text{g/l of free potassium cyanide}$$

WASTE TREATMENT

METROSTRIP AU 100 working solutions are alkaline in nature and contain potassium cyanide and gold metal. For each liter of METROSTRIP AU 100 solution, add 60 gms. Of calcium hydrochloride, as follows:

- A. Dissolve the hydrochloride in water and add to cold METROSTRIP AU 100 working solution slowly, with good agitation to avoid localized overheating from the resulting exothermic reaction.
- B. Maintain a pH of 10 or high with sodium hydroxide during the above procedure.
- C. Reanalyze for un-reacted (free) potassium cyanide. Add additional hydrochloride in the ratio of 8 kg per kg of total potassium cyanide.
- D. After the hydrochloride has reacted completely, the solution is allowed to stand, gold (and base metal-hydroxides) will precipitation and should be filtered. In order to make sure gold precipitation is completed, an further addition of zinc or aluminum powder is necessary.
- E. Neutralize the pH 6 to 8. Consult local authorities for disposal regulation of treated stripper.