

## Gold Coating Removal Methods

### CAUTION:

- It is advisable to perform these types of processes under a well-ventilated chemical hood.
- Wear proper protection on hands, exposed tissue, eyes etc.
- Be very careful with Aqua Regia it is fast, and dangerous.

#### 1. Hot Solder Sn + Pb (Tin 50% and Lead 50%)

Use 50% Tin and 50% Lead Solder without flux.

Fill solder beaker (25 to 50ml beaker) with enough lead solder for the strip length that is required.

Sprinkle some flakes of wave oil on top of solder, or add 1-2 eye drops of liquid wave oil for every 5ml of Tin/Lead mix.

Place the beaker under a fume hood on a temperature controlled hot plate set at 300°C.

Ensure the fumes are being exhausted.

Stripping the fibers; when the hot plate is up to temperature the fibers can be dipped into the liquid solder for approximately 30 second to remove the gold jacket (this time will vary with Gold thickness).

After stripping the gold off there will be a layer of Wave Oil on the fiber.

Dip the fiber in Hot Sulfuric acid, rinse in DI water, then ultrasonically in acetone, and finally let dry.

#### 2. Aqua Regia $\text{HNO}_3+3 \text{HCl}$ (Nitric Acid and Hydrochloric Acid 1:3)

Aqua-Regia: 3 parts Hydrochloric Acid, HCl, Technical grade or Reagent.

Grade, ~ 38% w/w Fisher or equivalent/1-part Nitric Acid,  $\text{HNO}_3$ ,

Technical grade or Reagent grade, ~ 70% Fisher or equivalent.

Dip into acid.

Agitate to speed up removal of all Gold.

Rinse in  $\text{H}_2\text{O}$ , Dip in Acetone and let dry.

#### 3. Potassium Iodide:

Potassium Iodide + Iodine + water (8:3:8 by weight).

Dissolve 8gm Potassium Iodide, KI, and 3gm Iodine,  $\text{I}_2$ , in 8ml water.

Dip into solution and agitate until all gold is removed.

Rinse in Methanol, then Acetone and let dry.

#### 4. Clean $\text{H}_2 \text{O}_2$ Flame:

Use a full circle miniature torch positioned vertically (preferably utilizing quartz jets).

Insure there is a fine membrane filter attached to both  $\text{H}_2$  and  $\text{O}_2$  lines.

Dial flame to be precise with strip line (flame should mix in air)

Lower fiber into torch's center while simultaneously rotating the fiber (best accomplished mechanically).

Rinse exposed glass with acetone and let dry.

This method will leave a bead of Gold at the strip line which can be used for soldering onto connectors.