



# TIFOO

## SILVER ELECTROLYTE

# MANUAL

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#### **Safety**

For your own safety, please wear gloves and safety glasses. This product contains silver complexes that can blacken the skin for some days or weeks in case of skin contact. Store the product in the dark and don't expose it to the sun.

#### **Application fields for the silver electrolyte**

**Suitable material for silver-plating:** nickel, copper, brass, tin, lead, etc.

The silver plating solution contains glossing agents that allow a glossy metal deposition of silver. Polishing afterwards is therefore barely necessary. Various metals can be silver-plated as follows:

**Copper, brass, nickel, palladium, gold:** can be silver-plated directly

**Iron, tin, lead, etc.:** copper-plate (with alkaline copper) or nickel-plate first and then continue as indicated above

#### **Application of the silver electrolyte (Immersion plating)**

A voltage of more than 1.5 volts causes a black deposition of the silver. We don't recommend to increase the voltage to more than 1.2 volts. The needed current density is normally achieved with a voltage of 1.0 to 1.2 volts. After a few minutes, the object will be covered by a closed white silk-matt silver layer. The longer the silver-plating, the thicker this layer will be. 5 minutes per side are enough for silver-plating ornaments. You can make the object shine with a polishing cloth and Tifoo PowerPolish. After a longer operation, it can happen that the electrolyte's pH-value is too acidic. When this happens, the electrolyte starts to smell acidly like sulphur dioxide. This can be remedied by adding a bit of sodium hydrogen carbonate.

### Important specifications:

**pH-value:** ~ 9.2

**Voltage for pen plating:** 1.5 - 2.0 volts

**Voltage for tank plating:** max. 1.5 A/dm<sup>2</sup>

**Silver content:** 30 g / L

**Anode material:** silver

**Growth of layer thickness:** 25 µm / hour (at 0.6 A/dm<sup>2</sup>)

**Preparation:** clean and degrease thoroughly before

### Hints and trouble shooting

- In case of spallings or difficulties for the silver to stick especially on non-ferrous heavy metal and/or copper, a thin gold layer can already solve the problem. For gold-plating copper, please use Chamaeleon or Midas.
- The Tifoo Silver plating solution must not be mixed with another or an older silver plating solution
- When the silver plating solution is used with the GalvanoBrush, our silver top part should be put on the graphite rod anode because this will improve the deposition by a lot

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