

24 Karat Gold Plating – Beginner Guide Brush, Tampon & Bath Electroplating

This guide is beginner-friendly, practical, and aligned with internationally established sources and training standards. It applies equally to brush/tampon plating and bath plating using a 24-karat gold electrolyte.

1. What Is Gold Plating?

Gold plating is an electrochemical process that deposits a pure 24-karat gold layer onto a conductive surface. The coating is bright, color-stable, and corrosion-resistant.

2. Electrolyte & Coating Properties

Gold content: approx. 8 g/L or 12 g/L
higher gold content → faster deposition
color: rich, warm 24K gold tone

3. Suitable Substrates

Directly suitable:

Copper

Nickel

Silver

Brass

Some stainless and chromium steels

If adhesion issues occur:

apply an intermediate copper, nickel, or white bronze layer first

4. Safety

not classified as hazardous, but irritating

Wear protective gloves

Wear safety goggles

5. Surface Preparation

Polishing

Polish surface to high gloss

Cleaning & Degreasing

Thoroughly degrease with electrocleaner

Activation

Activate surface at approx. 2.7 V

Do not allow to dry

6. Electrical Connection (Normal Polarity)

Positive (+): handpiece with electrode and cotton/fabric pad

Negative (–): workpiece with crocodile clip

Electrodes:

Stainless steel or graphite (standard)

Platinum anode for layer thicknesses above 2 µm

7. Operating Parameters

Voltage: start at approx. 5 V

Temperature: minimum room temperature
Electrolyte: liquid or thickened (gel former optional)

8. Brush / Tampon Gold Plating

Soak pad with gold electrolyte
Plate using gentle, circular movements
Continue until a rich gold color is achieved

9. Bath Gold Plating

Position workpiece centrally
Choose appropriate anodes
Increase voltage slowly
Build desired thickness

10. Rinsing & Finishing

Rinse with distilled water only
No drying time required
Polish gently with a soft cloth and care product

11. Common Beginner Issues

Dull finish: insufficient polishing or voltage too low
Poor adhesion: missing activation or unsuitable substrate

Key takeaway:

Proper preparation, activation, and correct anode choice ensure a brilliant, durable 24-karat gold coating.