



Direct Gold Plating

Through our surface treatment technology and results, Create new values.



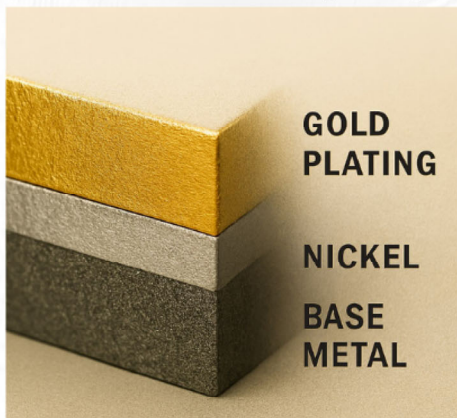
Direct Gold Plating Explained

Direct gold plating deposits gold directly onto parts without using an underlayer like nickel. Ideal for medical applications and nickel-allergy countermeasures.

For example, stainless steel is covered by a durable oxide layer, and direct gold plating can lead to poor adhesion. That's why gold plating on stainless steel typically requires a nickel underlayer. But nickel can cause allergies and, in some cases, serious reactions upon skin contact. To solve this, ERG employs direct gold plating.

Medical Application	Reason Gold Plating Is Suitable	Key Benefits
Implants (stents, pacemakers, fixation devices)	High biocompatibility with minimal tissue reaction	Reduces post-operative inflammation and infection; ensures long-term stability
Electrodes / Sensor Components (ECG, EEG, biosensors)	Excellent electrical conductivity and corrosion resistance	Strong resistance to oxidation and corrosion; maintains stable conductivity over time
Surgical Instruments and Fixtures (forceps, tweezers, micro tools)	Bright appearance and corrosion resistance	High visibility inside the body; resists degradation after cleaning and sterilization
Catheters / Guide Wires	High density and radiopacity	Clearly visible under X-ray imaging; improves intraoperative precision
Complex-Shaped / Microstructured Parts (microtubes, blind-hole components)	High malleability and uniform plating capability	Enables high-precision processing and stable bonding performance

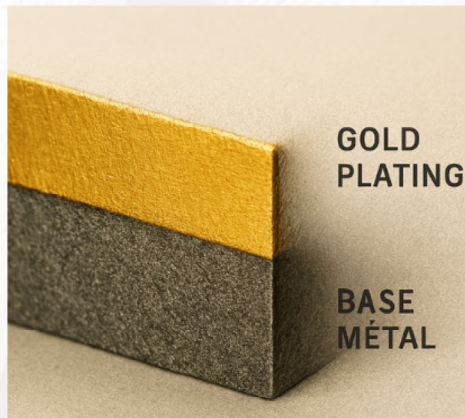
Conventional Electroplating



GOLD PLATING
NICKEL
BASE METAL



Direct Gold Plating



GOLD PLATING
BASE METAL

Advantages

- Allergy-safe approach
- Magnetic effects mitigated
- Streamlined process without nickel

Limitations

- For certain substrates, gold diffusion may occur, potentially causing discoloration or higher contact resistance. Mitigated via substrate selection and coating thickness design

Supported Plating Materials

Stainless steel, titanium, tungsten, etc.

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