



Smoky – Chrom

Black Chrome (Smoky Chrome) Plating Guide for Beginners

Brush / Tampon and Bath Plating

This guide is **beginner-friendly, practical, and aligned with commonly accepted international practice**. It applies **equally to brush/tampon plating and bath plating** using a **black chrome / smoky chrome electrolyte** (e.g. BMG-108.4).

Black chrome is widely used as an **alternative to black rhodium or black ruthenium** for decorative finishes.

1. What Is Black Chrome (Smoky Chrome)?

Black chrome is a **dark gray to deep black chromium coating** with a metallic appearance. The layer is **thin**, decorative, and its final look strongly depends on the substrate.

→ Black chrome is **not intended for corrosion protection**.

2. Suitable Substrates (Color Depends on Base Layer)

- **Copper:** very dark, nearly black
- **Nickel:** dark anthracite
- **Gold / gold flash:** uniform, high-quality black chrome finish

Industry standard for best appearance: **polished nickel or gold underlayer**.

3. Safety

Black chrome electrolytes are chemically active:

- Wear protective gloves
- Wear safety goggles
- Avoid skin and eye contact
- Work in a well-ventilated area

4. Surface Preparation (Critical Step)

4.1 Polishing

- Polish surface to **high gloss**
- Black chrome exactly reproduces the surface finish

4.2 Cleaning & Degreasing

- Thoroughly degrease with electro cleaner
- Degrease clamps and contact points
- Handle only with gloves afterward

→ Oxides or grease will immediately stop the process.

5. Additional Activation (Recommended for Gold Surfaces)

- Degrease gold surface and negative contact again
- Activate using **10 % sulfuric acid**
- Time: approx. **1–2 minutes**
- Rinse with water

This improves **adhesion and color depth**.

6. Electrical Connections

- **Positive (+):** handpiece with electrode and pad
- **Negative (-):** workpiece with crocodile clip

Electrodes:

- Platinum or graphite electrode
- Cotton pad (liquid or gel form)

7. Technical Parameters (Beginner Guidelines)

- **Voltage:** start at **3 V**
- **Temperature:** room temperature
- **Electrolyte:** liquid or thickened (gel former optional)

8. Brush / Tampon Black Chrome Plating

Additional notes:

- Pre-warm workpiece in warm water
- Keep pad well soaked
- Use light, circular movements

Procedure:

1. Soak pad with black chrome electrolyte
2. Connect plus and minus correctly
3. Plate evenly
4. Visually control color

Post-densification:

- Lightly wipe surface with **10 % sulfuric acid**
- Improves coating density

9. Black Chrome Bath Plating

Additional notes:

- Use platinum or graphite anodes
- Center the workpiece
- Never use steel anodes

Procedure:

1. Bring electrolyte to room temperature
2. Connect workpiece (negative)
3. Connect anode (positive)
4. Slowly increase voltage
5. Observe color
6. Remove and rinse

10. Post-Treatment

- No drying or curing time required
- Rinse with water
- Polish gently with a soft cloth and care product

11. Common Beginner Issues

Uneven color: poor polishing, uneven movement

Too light / gray: voltage too low, unsuitable substrate

No deposition: grease, oxides, or dirty contact clip