

Thank you for purchasing JodeCraft Matt Copper Plating Solution. This professional-grade formulation provides a smooth, consistent, non-reflective copper undercoat or decorative matte finish. It is ideal for heavy build-up, restoration work, or preparing items for subsequent satin or antique plating treatments.

1. Operating Parameters Overview

Parameter	Optimum Range
Operating Temperature	Room Temperature (18°C – 25°C)
Anode Type Required	Pure Copper (Phosphorised Copper preferred)
Current Density	1.0 – 2.5 A/dm ² (Amps per square decimeter)
Voltage Range	Typically 1.0V – 2.5V (Adjust to maintain target amperage)
Agitation	Mild mechanical stirring or work-rod movement (Avoid violent air)
Filtration	Periodic carbon or cotton-wound filtering recommended

2. Equipment Setup & Tank Preparation

- **Plating Tank:** Use a clean polypropylene, HDPE, or glass container. Ensure the tank has been thoroughly rinsed with distilled water prior to filling.
- **Anodes:** Use pure copper plates. The anode surface area should ideally be equal to or slightly larger than the surface area of the item being plated (1:1 to 2:1 ratio). Ensure anodes are clean and free of grease.
- **Power Supply:** A regulated DC bench power supply with fine current (amperage) adjustment capabilities is essential for uniform results.

CRITICAL SAFETY WARNING

This chemical solution is corrosive and contains copper salts. Always wear appropriate Personal Protective Equipment (PPE) including safety goggles, nitrile gloves, and an apron. Use only in a well-ventilated workspace. Keep out of reach of children and pets.

3. Step-by-Step Plating Procedure

1. **Step 1: Substrate Preparation.** The quality of the final plating depends entirely on surface cleanliness. Items must be thoroughly polished, chemically degreased, and rinsed. If plating over steel, zinc, or pot metal, a nickel strike or cyanide-free copper flash is mandatory before entering this acid copper bath to prevent an immersion deposit.
2. **Step 2: Solution Filling.** Pour the ready-to-use JodeCraft Matt Copper solution directly into your clean tank. Do not dilute with tap water.
3. **Step 3: Anode Integration.** Suspend your copper anodes along the sides of the tank and connect them to the positive (+) red terminal of your DC power supply.
4. **Step 4: Electrical Calculation.** Calculate the surface area of your workpiece. Set your power supply current limit according to the recommended density range (1.5 A/dm^2 is a reliable starting point).
5. **Step 5: Immersion & Plating.** Suspend the workpiece from your cathode jiggling wire. Connect the wire to the negative (-) black terminal of your power supply. Submerge the piece fully into the solution while live to ensure immediate current contact.
6. **Step 6: Monitoring.** Plate for 15 to 45 minutes depending on your desired thickness. Gently move the part or use light agitation to ensure fresh ions reach all recessed areas.
7. **Step 7: Post-Treatment.** Turn off the power supply, remove the workpiece, and immediately rinse it thoroughly in a clean distilled water drag-out tank, followed by a running water rinse. Dry immediately to prevent water spots or oxidation.

PRO-TIPS FOR JODECRAFT SOLUTIONS

Because this is a matte bath formulation, it will naturally yield a soft, clean pinkish-salmon copper surface. If you intend to use this as a base for a mirror finish, it can easily be wire-brushed, polished, or direct-plated over using a JodeCraft Bright or Satin Nickel solution.

4. Troubleshooting Common Issues

- **Dull, Dark, or Burning Edges:** The current density is too high. Reduce your amperage on the power supply or increase the distance between the workpiece and the anodes.
- **Slow Plating or Rough Texture:** Current density may be too low, or the bath requires physical filtration to remove suspended copper particulates.
- **Pitting or Fine Pinholes:** Check for proper component cleaning. Ensure mild agitation is active to dislodge any microscopic gas bubbles that form on the cathode surface during plating.

JodeCraft Electroplating Solutions

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