

JODECRAFT

PRODUCT OPERATING & INSTRUCTIONS GUIDE — ALKALINE COPPER STRIKE SOLUTION

1. Product Overview & Purpose

The JODECRAFT Alkaline Non-Cyanide Copper Strike Solution is formulated to provide exceptional adhesion on difficult-to-plate substrate metals, including steel, cast iron, zinc die-cast, and lead-tin alloys. Acting as a vital preparatory layer, it prevents displacement (immersion) plating and ensures a robust, tightly bonded foundation prior to subsequent bright copper, nickel, or decorative finishing processes.

2. Bath Preparation & Setup

- **Tank & Equipment:** Use clean tanks constructed of polypropylene, PVC, polyethylene, or glass-lined steel. Ensure all equipment is thoroughly cleaned and free from residues of previous plating solutions.
- **Water Quality:** Always use distilled or deionized water for preparing the bath or topping up evaporative losses to prevent contamination from tap water minerals.
- **Anodes:** Utilize pure electrolytic copper anodes or stainless steel (316 grade) auxiliary anodes. Ensure anode bags are clean and well-maintained.

3. Recommended Operating Parameters

Operating Parameter	Recommended Range	Notes / Adjustments
Bath pH	9.0 – 9.5	Monitor regularly. Adjust upwards with small additions of sodium bicarbonate if required.
Solution Temperature	20°C – 35°C	Room temperature operation is typically ideal. Avoid excessive heating.
Cathode Current Density	1.0 – 2.5 A/dm²	Keep initial current on the lower end to prevent burning on complex geometries.
Plating Duration	2 to 5 minutes	Sufficient time to establish a continuous, adherent strike film. Do not over-plate.

4. Step-by-Step Operating Workflow

1. **Cleaning & Degreasing:** Thoroughly clean parts using a heavy-duty alkaline soak cleaner or ultrasonic degreaser to remove all traces of oil, grease, shop soils, and fingerprints.

2. **Water Rinse:** Rinse components thoroughly in clean running water.
3. **Acid Activation:** Lightly acid-dip steel and iron parts (e.g., using a 10% citric acid or dilute hydrochloric acid solution) to eliminate surface oxides, followed by a thorough secondary water rinse.
4. **Copper Striking:** Immerse the work-piece into the alkaline copper strike bath. Apply current immediately (or introduce live into the tank) for 2 to 5 minutes.
5. **Post-Strike Rinse:** Rinse the struck parts thoroughly in clean water before immediately transferring them into your main plating bath (such as acid copper, bright nickel, or gold). Do not allow parts to dry between steps.

5. Maintenance & Troubleshooting

- **Contamination Control:** Prevent drag-in of acid or other foreign metallic ions into the alkaline strike bath by ensuring thorough rinsing between processing steps.
- **Filtration:** Periodic gentle filtration helps remove particulate matter and maintains solution clarity.
- **Storage:** Store working solutions in sealed containers at room temperature away from direct sunlight and incompatible acidic materials.

Safety & Personal Protective Equipment (PPE): Always wear appropriate protective equipment when handling chemical solutions, including chemical splash goggles, nitrile gloves, and a lab coat or apron. Refer to the product Safety Data Sheet (SDS) for detailed emergency procedures and regulatory compliance data.