Hallcoat CUBR

Product Code: 2420004
Revised Date: 09/17/2012

Hallcoat CUBR
Clear Chromate Conversion Coating for Copper Alloys

Hallcoat CUBR is a powdered product, single component chromate conversion coating. When mixed with water as directed below it will produce a clear chromate conversion coating on brass (including high silver alloys), copper, and bronze. This conversion coating will provide excellent tarnish/corrosion protection and will provide for maximum adhesion between the base metal and organic coatings such as paints and clear lacquers (water or solvent based).

Immersion in **Hallcoat CUBR** solutions will eliminate "spotting out" by neutralizing residual alkaline films which could remain on the surface of parts after cleaning or plating.

OPERATING CONDITIONS

Solution makeup:	0.5 to 3.0 oz/gal (optimum 1.0 oz/gal)
Temperature:	70 - 90f (21 - 32c)
Immersion time:	5 to 60 seconds

EQUIPMENT

Tank: Stainless steel, PVC, polyethylene, steel. (Steel may be used but the other recommendations are preferred. If steel is used, the tank must be cleaned out thoroughly).
Racks: Conventional plating racks.
Baskets: Stainless steel, nickel/chrome, plastisol coated baskets or steel.

Low concentrations are usually sufficient for spotting out. Higher concentrations will be required if extended tarnish protection is desired.

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TYPICAL OPERATING CYCLE

1. Brass plate
2. Cold water rinse
3. Cold water rinse
4. Immersion in **Hallcoat CUBR** solution, 1.0 oz/gal, room temperature 5 to 30 seconds.
5. Cold water rinse
6. Immersion in water-base lacquer
7. Drain
8. Dry

MAINTENANCE AND CONTROL

Solutions required for analysis

1. Standard 0.1 n potassium permanganate
2. Ferrous ammonium sulfate solution, prepared by dissolving 35.0 grams $FeSO4\ (NH4)_2\ SO4$ - 6H20 and 10 ml concentrated sulfuric acid in one liter of distilled water.

PART I OF ANALYSIS

1. Pipette a 20 ml portion of the ferrous ammonium sulfate into a 400 ml beaker.
2. Dilute with 100 ml of distilled water.
3. Add 5 ml of concentrated sulfuric acid and 4 ml of phosphoric acid.
4. Cool to room temperature and titrate with the standard permanganate. At the end point the color changes from pale yellow to pinkish. The color should hold for one minute after stirring.
5. Read the burette.
6. Record the reading. This will be **A** for calculation below.

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PART II OF ANALYSIS

1. Pipette a 10 ml sample of the **Hallcoat CUBR** solution into a 400 ml beaker and dilute to 100 ml with distilled water.
2. Pipette a 20 ml portion of the ferrous ammonium sulfate into beaker.
3. Add 5 ml of concentrated sulfuric acid and 4 ml of phosphoric acid.
4. Cool to room temperature and titrate with the standard permanganate until the clear blue-green color changes to a purple gray shade.
5. Record the reading. This will be **B** for calculation below.

CALCULATIONS

Hallcoat CUBR (oz/gal) = (A - B) x 0.097

CAUTION

Hallcoat CUBR is a strong oxidizing agent. It should be stored in a cool dry area. Do not allow this material to contact combustible materials. Avoid contact with skin and eyes. Wear protective clothing, goggles and rubber gloves. Flush exposed areas immediately with clean, cold water. In case of injury, contact a doctor immediately.

WASTE DISPOSAL & SPILL PROCEDURES

Spill, leak or release: stop leaks. Remove as much as possible (e.g., vacuum truck). Then treat the spill area with reducing agent to convert the hexavalent chromium to the trivalent form and neutralize with a weak base. Following neutralization, soak up with inert absorbent material (e.g. sand), place in a closed, labeled container and store in a safe place to await disposal. **Never flush to sewer**. Significant spills should be reported to appropriate agencies.
Neutralizing chemicals: reduce hexavalent chromium with sodium bisulfite, sodium sulfite, ferrous sulfate or ferrous chloride. Neutralize with sodium bicarbonate, soda ash, or lime.

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WASTE DISPOSAL

Hexavalent chromium in solution may be reduced to trivalent chromium by reducing agents such as sodium bisulfite, sodium sulfite, sulfur dioxide, ferrous sulfate or ferrous chloride. The reduced chromium may then be precipitated as the chromic oxide by neutralizing to a pH of 7.5 with soda ash, caustic soda or lime. The solid material may be disposed of via an approved chemical waste landfill. Shipments should be manifested. Dispose of in accordance with all federal, state and local health pollution requirements.

WARRANTY

THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.

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