



CUBRITE 200

ALKALINE COPPER

INTRODUCTION

Cubrite 200 is a cyanide free alkaline copper. The process allows direct deposition on to steel, copper alloys, zincated aluminium and zinc based die cast.

BENEFITS

- Cyanide free process.
- Low copper concentration.
- Excellent coverage.

SOLUTION MAKE -UP

Cubrite 200 Make Up 300ml/L

Cubrite 200 Additive 65ml/L

OPERATING DATA

	Range	Optimum
Copper (g/L)	7.5 – 18	9.5
P:Cu ratio		4:1
pH*	9.2 – 9.8	9.5
Temperature (°C)	50 – 70	55
Cathode cd (ASD) Rack	0.5 – 3.0	1.5
Barrel	0.1 – 1.0	0.5
Plating rate	0.3µm/min at 1.5asd	
Agitation	Air	
Extraction	Recommended	

* See notes

EQUIPMENT

Tanks	Polypropylene or PVC lined tanks.
Heaters	Stainless steel or PTFE heaters with thermostatic control.
Filtration	Continuous filtration through 5µm filter cartridges or carbon.
Anodes	OFHC copper anodes or chips in titanium baskets.



INSTALLATION

It is essential that the tanks to be used for Cubrite 200 are thoroughly cleaned and leached before any product is introduced.

If in any doubt as to the cleaning procedure contact PMD Technical Department.

1. Half fill tank with deionised water.
2. Add the Cubrite 200 Additive.
3. Adjust pH with 50% potassium hydroxide solution.
4. Add the Cubrite 200 Make Up.
5. Recheck pH and adjust if required.
6. Make up to final volume with deionised water.
7. Heat to operating temperature.

PROCESS SEQUENCE (Steel)

1. Soak clean
2. Rinse
3. Pickle
4. Rinse
5. Electroclean
6. Rinse
7. Pre dip (1% Cubrite 200 Additive)
8. Cubrite 200
9. Rinse
10. Continue dependant on application.

MAINTENANCE AND CONTROL

The solution should be analysed regularly and replenished as necessary. (See analysis methods).

Copper is maintained by dissolution of the anodes.

Additive is maintained by ampere hour additions at the rate of 1 – 2L/1000Ahr. After additions pH must be corrected.

pH is corrected by the addition of Cubrite 200 Additive to lower or 50% potassium hydroxide to raise.

Impurities in the bath must be kept to a minimum:

Cyanide produces dark layers and poor adhesion. Treat bath with hydrogen peroxide.

Lead >50ppm produces dark deposits in hcd. Plate bath out at hcd.

Iron >2g/L give poor adhesion at hcd. Plate out at hcd.



ANALYSIS METHODS

1. Copper

Reagents

Ammonium Persulphate

Ammonia solution

PAN indicator

0.1N EDTA (standard volumetric solution)

Method

1. Pipette 5ml sample in to a 250ml conical flask.
2. Add 50ml deionised water.
3. Add 2-3g ammonium persulphate.
4. Stir for 15 mins.
5. Add 5ml ammonia solution.
6. Add 5 drops PAN indicator.
7. Titrate to a green end point with 0.1N EDTA
8. Record titre = t mls

Calculation

$t \times 1.27 = \text{g/L copper}$

Replenishment

For every 1g/L copper required add 33ml/L Cubrite 200 Make Up.

2. Phosphorous

Reagents

Dr Lange Test Kit LCK350

Method

1. Pipette 0.5ml sample in to a 100ml volumetric flask and make up to the mark with deionised water.
2. Label as A.
3. Pipette 2ml of (A) into a 50ml volumetric flask and make up to the mark with deionised water.
4. Label as C.
5. Remove the Dosicap from a cuvette.
6. Pipette 0.4ml (A) in to this and shake.
7. Add 0.5ml Reagent B
8. Close the cuvette and leave to stand for 30 mis.
9. Measure and record the result as A.

- Remove the dosicap from a cuvette.
- Pipette 0.4ml (C) in to this.
- Replace cap, fluted end up, and shake.
- Heat to 100°C for 1 hour.
- Cool to room temperature.
- Add 0.5ml Reagent B.
- Close the cuvette and leave to stand for 10 mins.
- Measure and record result as C.

Calculation

$$\frac{B \times 5) - (A \times 0.2)}{\text{Copper (g/L)}} = \text{ratio P:Cu}$$

Replenishment

Calculate the addition required as follows:

$$(4 - \text{ratio}) \times \text{copper(g/L)} \times 12 = \text{ml/L Cubrite 200 Additive required.}$$

NOTES

pH pH range for aluminium and zinc based die cast is lower at 9.0-9.4.

DISPOSAL

Dispose of in accordance with local authority requirements.

PRODUCT FAMILIES

The following products are referred to in this data sheet.

PRODUCT NAME	PRODUCT NUMBER
Cubrite 200 Make Up	567002
Cubrite 200 Additive	567001

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