TECHNICAL DATA SHEET

CUMAX AC-182

PROCESS :

CUMAX AC 182 :

- Is an acid Copper plating process.
- Produces highest brightness and most brilliant deposits.
- Deposits are low stressed and ductile Copper.
- Is for functional and decorative applications.
- Shows high leveling coupled with good throwing power.
- Gives high corrosion resistance and is suited for steel , zinc , die cast and plating on plastics.

PRODUCTS :

CUMAX AC 182:	Make up solution and for maintenance along With CUMAX AC 183 for uniform **bright** deposits.
CUMAX AC 183 :	Make up solution and for maintenance along With CUMAX AC 182 for **leveling** over the entire current density.
CUMAX AC 184 :	To be used for extra ductility.

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PLATING:

Tank material :	Steel lined with rubber , PP or PVC coating.
Anodes :	Phosphorous Copper , 99.9% (0.02 – 0.06 % phosphorous content)
Cooling / Heating :	Cooling and heating can be needed to keep

	the electrolyte in a certain temperature range. (20 – 35^{0}C).
Filtration :	Continuously at 1 - 5 bath volumes / hour.
Agitation :	Air agitation (oil and dust free compressed air) in additional mechanical agitation is recommended
Voltage :	1.5 – 6.0 V
Cathodic current density :	Barrel -0.5 – 1.0 A / dm^2 Rack - 1.0 – 6.0 A / dm^2
Anodic current density :	0.5 – 2.5 A / dm^2
Temperature :	20 – 35^{0}C
pH :	< 1

Concentration :

	Optimum	**Range**
COPPER metal	55 g / l	50 – 60 g /l
Copper sulphate	220 g / l	190 – 240 g / l
Sulphuric acid	65 g / l	60 – 70 g / l
Chloride content	100 mg / l	90 – 120 mg / l
CUMAX AC 182	10 ml / l	8 - 12 ml / l
CUMAX AC 183	0.7 ml /l	0.5 – 0.9 ml /l
CUMAX AC 184	0.1 ml /l	optional

Make up procedure :

- Fill a separate tank with 50 % DM water.
- Add required quantity of Copper sulphate (5 H_2O).
- Add activated carbon 2 g / l and stir for 1 hour till the solution becomes clear.
- Now add sulphuric acid and chloride into the solution.
- Make up with DM water upto 90 % of the final volume and cool down to room temperature.
- Fill upto the final volume with DM water.
- Then add **CUMAX AC 182, CUMAX AC 183 and CUMAX AC 184** and stir well.
- Add (25 – 28 ml) HCL for 100 lts bath.
- Check chloride concentration and make sure Chloride mg / l (ppm) does not exceed 120 ppm.

Copper content :

The Copper concentration should be kept in the required analytical ranges. If the concentration decreases drastically, it can cause burns in high current density areas or poor leveling in the low current density areas.

Chloride Content :

The chloride content must be kept in recommended range. An excess of chloride reduces the leveling and a lack of chloride reduces the degree of brightness. If the addition **CUMAX AC 182** additives does not show any effect, please check the chloride content.

For increase of 1 mg (ppm) of chloride in 1000 lts bath add 1.65 gms of sodium chloride.

Sulphuric Acid :

The sulphuric acid content should be in recommended ranges and always lower than 80 g / l., for increase of 1 g / l of sulphuric acid (density 1.84) in 1000 ltr bath add 1 kg sulphuric acid.

Consumption for 1000 amp H :

CUMAX AC 182	100-200 ml
CUMAX AC 183	50-100 ml

CUMAX AC 184	Only for extra ductility.

Above consumption figures are given as rough guide lines for both maintenance. These may vary depending upon the degree of brightness and leveling required.

Both brightener **CUMAX AC 182 and CUMAX AC 183** have to be replenished at regular intervals.

To remove the organic contaminations active carbon treatment is recommended.

DISCLAIMER:

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