COLSID AP MILLENNIUM

High Speed - Boric Acid Free - Bright Chloride Zinc Plating Process

Superior Brightness, Levelling & Distribution

Produces brilliant, uniform deposits ideal for fasteners, automotive hardware, and high-volume components.

High Current Carrying Capacity for Increased Productivity

Supports higher current densities for faster plating cycles, improved throughput, and reduced energy consumption.

Exceptional Tolerance to Impurities & Excess Brightener

Maintains deposit quality even with contamination or excess brightener levels.

Higher Operating pH with Reduced Iron Dissolution

Optimized bath chemistry minimizes iron buildup and extending bath life.

High Cloud Point.

Stable operation at elevated bath temperatures up to 55 °C

A Boric Free Game Changer For High Volume Output

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In association with

COLUMBIA® CHEMICAL
Simplifying Surface Finishing®

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FEATURES AND BENEFITS

CONSOL MILLENNIUM – 01

BORIC FREE, BRIGHT CHLORIDE ZINC PLATING PROCESS.

Brought to India in association with Columbia Chemical Corpn., - U.S.A., World leaders in Zinc Plating Technologies.

- High Speed Boric Free, Chloride Zinc plating system for brilliant, leveled, ductile Zinc deposits.
- Boric Free chemistry - Saves cost of Boric Acid, eliminating time consuming analysis and prevents crystallization on anodes in cold weather.
- Tolerant to high temperatures – Thermally stable **up to 55º C.**
- Economical Make-Up & Replenishment - **Costs substantially lower than Boric based baths**.
- High current carrying capacity for burn free deposits.
- Ideal for High speed continuous strip and wire plating operations and for high volume production barrel and rack plating.
- Delivers 20-30% higher production than Boric based Potassium baths – Ideal for High production automatic Plating machines.
- Wide Current Density Window, from 2 ASF to over 100 ASF.
- Extremely tolerant to organic contaminants such as oils/cleaner surfactants and inorganic contaminants such as Iron/Copper. User friendly simple operation.
- Quick, sharp and haze free brightening – shorter timings than Potassium/Boric baths. Increases production by reducing plating time for constant prescribed thickness.
- Direct Slide conversion over Potassium/Boric solutions – very simple to carry out.
- Requires **no changes** in existing plating equipment & waste-water treatment methods.
- Creates minimal foam – Can be used with air agitation and evaporative recovery.
- No Oil-Out of Additives at High temperature, cloud point of 75º C., Very stable in Summer & Winter. Wide temperature tolerance band from 20º to 55º C. Optimum 25º to 35º C.

OPERATING PARAMETERS :

	Workable Range	***Optimum***
Zinc Metal	15 ~ 37 g/l.	20 g/l.
Total Chloride	120 ~ 165 g/l.	140 ~ 150 g/l.
CONSOL MILLENNIUM Modulator **	50 ~ 80 g/l	70 g/l
CONSOL MILLENNIUM - 01 Wetter	30 ~ 50 ml/l	40 ml/l
CONSOL MILLENNIUM - 01 Brightener	0.6 ~ 0.8 ml/l	0. 7 ml/l
PH Electrometric	5.0 ~ 6.0	5.2 ~ 5.6
Operating Temperature	20º ~ 55º C.	25º ~ 35º C.
Current Density	***Rack:*** 5 ~100 ASF, ***Barrel:*** 2 ~ 20 ASF	

** - For High Drag-out fastener operations Modulator should be maintained at a minimum of 50 gm/lit.

CONSOL MILLENNIUM Zn Additive (A) and stir well. Pack Activated Carbon and Zinc Dust on the filter and run filter for 3 ~ 4 hours. Add the required amount of ***CONSOL MILLENNIUM - 01 Wetter*** (dilute with 2~3 parts of water) mix well, dilute with water to the final volume.

Attention: This sheet is only meant to provide Features and Benefits of the process mentioned. For detailed Usage, Please refer the product Technical Data Sheet. For Safety, handling and Chemical information please refer the Safety Data Sheet. These can be provided through a *Consolidated Metal Finishing Pvt. Ltd.* representatives or requesting us for the same by email.