



Product Bulletin

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ENEROX[®] COPPER/BRASS ADD SD

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ENEROX[®] COPPER/BRASS ADD SD is a unique product, blended especially for cyanide copper and brass plating and strike baths. It's formulation enhances the overall characteristics of the copper and brass deposit, brightness, and system performance.

SPECIAL FEATURES

- Promotes Uniform Anode Corrosion
- Deposit Grain Refinement
- Uniform Bright Deposit
- Non Metallic
- Suppresses High Current Density Burning
- Provides Wider Range of Plating Current Densities

RECOMMENDED APPLICATION CYANIDE COPPER PLATE & STRIKE BATHS

	Range	Optimum
Conc. Enerox [®] Copper/Brass Add SD	0.25-1% volume	As required
Temperature (strike)	110-130 deg F (43-54 deg C)	As required
Temperature (plate)	125-175 deg F (52-79 deg C)	As required
Current Density (strike)	5-20 ASF	As required
Current Density (bbl plate)	2-10 ASF	As required
Current Density (rack plate)	5-40 ASF	As required

NOTE: ENEROX[®] COPPER/BRASS ADD SD is compatible and effective when used in any of the typical plate and strike formulations, sodium and potassium salts. Your Hubbard-Hall sales representative or the Technical Center can recommend the best-suited bath formulation to meet specific requirements.

CONTROL PROCEDURE ENEROX[®] COPPER/BRASS ADD SD

The wet analysis for the copper plate or strike bath should be determined and appropriate additions made. Hull cell testing at 5 minutes should be conducted for barrel (1 amp) or rack (2 amps), at the specific process temperature. Deposit for the optimized bath should be fine grained, salmon pink, and uniformly bright throughout the current density range. The required plating salts and **ENEROX[®] COPPER/BRASS ADD SD** may be added to the hull cell first to confirm improvement. For example, 0.2-0.3% by volume additions of **ENEROX[®] COPPER/BRASS ADD SD** to the hull cell, until the

ENEROX[®] COPPER/BRASS ADD SD

preferred deposit brightness has been achieved. Once the appropriate maintenance schedule has been established, routine additions of **ENEROX[®] COPPER/BRASS ADD SD** can be made.

Anode polarization, high current density burning, and coarse deposit, indicates a requirement for ENEROX[®] COPPER ADDITIVE 85. 1-5 % by volume additions of ENEROX[®] COPPER ADDITIVE 85 are suggested to eliminate these adverse conditions.

Brightener Consumption:

The actual consumption of **ENEROX[®] COPPER/BRASS ADD SD** depends on the operating factors of the particular copper bath. These include: load size of the work, solution temperature, drag out loss. On an ampere hour basis, 4-5 quarts of **ENEROX[®] COPPER/BRASS ADD SD** may be consumed in 8,000 to 10,000 amp hours.

ENEROX[®] COPPER/BRASS ADD SD PROCESS BENEFITS

A controlled, operating copper plate or strike bath maintained with **ENEROX[®] COPPER/BRASS ADD SD**, provides the plater with a satisfactory copper deposit and additional process benefits. These include: a wider range of plating current densities, improved anode corrosion (efficiency), less consumption of cyanide salts, slower rate of carbonate build up. All these benefits contribute to overall operating economy.

PHYSICAL CHARACTERISTICS

Appearance	Clear, slightly colored liquid
Odor	Slight
Foaming Tendency	Low
Maximum Solubility	Complete

PRODUCT PROFILE

Caustic	Yes (<1%)
Phosphate	No
Silicate	No
Complexors	No
Chelates (EDTA, NTA types)	No

ENEROX[®] COPPER/BRASS ADD SD HAZARD CLASSIFICATION

DOT Hazard Class	None Assigned
DOT Shipping Name	None Assigned
UN Number	None Assigned
Packing Group	None Assigned
Guide Number	None Assigned

SAFETY INFORMATION

Please read and understand the ENEROX[®] COPPER/BRASS ADD SD Material Safety Data Sheet before handling and using this product.

ENEROX[®] COPPER/BRASS ADD SD

Cyanide containing additives / salts and their plating solutions are corrosive and poisonous. Always read the appropriate MSDS sheets to understand the risks and ENEROX[®] COPPER/BRASS ADD SD health hazards. Wear the recommended safety clothing and related gear when handling these additives and the plating solution.

WASTE TREATMENT & DISPOSAL

The plating solution is corrosive and poisonous. It should be handled as required for this type of material. Consult with licensed waste treatment engineers and equivalent, reputable resources, before implementing the use, handling, waste treatment, and transport of these solutions.

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.