# **Brite Ultra Cu-Pb** Switch to the E-Brite<sup>TM</sup> Ultra Cu-Pb Non-Cyanide Alkaline Copper Plating

of hazardous Cyanide

- Build Additional Copper with Acid Copper
- Provides Stronger
  Adhesion Passes the
  Smashed Bullet Test
  - Unique Greater Throwing Power
  - Formulated for barrel plating bullets and lead rack applications

E-Brite Ultra Cu-Pb non-cyanide alkaline copper plating, provides superior coverage over cyanide copper and better adhesion versus competing non-cyanide copper.

E-Brite Ultra Cu-Pb is a sustaining, easy-to-control process that lets you upgrade adhesion while taking out hazardous cyanide and its accompanying costs.

### Start taking advantage of E-Brite Ultra Cu-Pb today!

Send sample parts for plating. Call 262-786-9330 or E-mail: us-sales@epi.com to request a Hull Cell test solution or ask to install a pilot line.



Learn More: See reverse for Bath Make-up, Operating Conditions and Applications.

# E3rife Ultra Cu-Pb

A cyanide-free, alkaline copper plating process with coverage greater than cyanide copper, especially in barrel plating of lead alloys.

- Inexpensive and easy to use replenishes the copper in the solution by dissolving copper anodes.
- Plates directly on lead bullets and lead substrates - without a separate strike and without going in live.
- Bath produces superior results in both barrel and rack installations
   - as a strike.
- Outstanding pre-plate copper strike for acid copper

- No carbonates to be treated and contains no strong chelators.
- Copper deposit is fine grained, smooth, dense, and ductile:
  - Non-porous with excellent bonding properties.
- Uniform low current density distribution excellent micro-throw.
- Compiles with specifications: MIL-C-14550B and SAE-AMS-2418F for copper plating.

#### E-Brite Ultra Cu-Pb has many benefits: • Eliminates the dangers and extensive

• Eliminates the dangers and extensive costs of hazardous cyanide in the workplace, improving employee health and safety.

- Lower copper concentration, which means less sludge generation.
- Finer grain than cyanide copper increases the density of the deposit.
- Lower operating temperatures reduce energy costs.

#### BATH MAKE-UP A new solution of the E-Brite Ultra Cu-Pb process will require the addition of:

	RACK PLATING	BARREL PLATING			
CONCENTRATION	OPTIMUM	RANGE	OPTIMUM	RANGE	
E-Brite Ultra Cu-Pb	40% by volume	30-50% by volume	40% by volume	30-50% by volume	
E-Brite Ultra Cu-Pb "E"	10% by volume	8-12% by volume	10% by volume	8-12% by volume	
E-Brite Ultra Cu-Pb "pHA"	8% by volume	5-10% by volume	8% by volume	5-10% by volume	
E-Brite Ultra Cu-Pb "X"	.25% by volume	0.25-1% by volume	0.25% by volume	0.25-1% by volume	

**E-Brite Cu-Pb** is a liquid concentrate, which contains 2.4 oz/gallon of copper and all components of the bath. It is used to make up a new solution. The **E-Brite Cu-Pb "E"** electrolyte is added to maintain the bath and complexes the copper as it is dissolved from the anodes. A properly adjusted bath in regard to anode area requires only the addition of **E-Brite Cu-Pb "E"** for proper operation.

#### **OPERATING CONDITIONS**

	RACK PLATING		BARREL PLATING OPTIMUM RANGE					
pH: TEMPERATURE: VOLTAGE:	9.6 70° F	9.2-10.0 65°-75° F 1-6 Volts		9.8 70° F	9.5-10.0 65°-75° F 15-18 Volts			
CATHODE-CURRENT DENSITY:	10 ASF Minimum of 1	5-25 ASF 0 ASF in or	der to corrode th	4 ASF e anodes and	2-8 ASF d maintain the			
AGITATION:	copper concentration in the bath. Vigorous air mandatory for rack lines and also helpful in barrel lines. Use low pressure, large volume blowers only - not compressed air.							
COOLING: RECTIFICATION:	Use stainless steel colling coils and a chiller. Rack: 9 volts, Barrel: Minimum of 15 volts.							
FILTRATION:	Continuous 5 micron with carbon pack.							

#### **Step by Step Application**

To plate on die-cast zinc surfaces:

- 1. Soak clean with EPi's E-Kleen 163 or 153
- 2. Cold water rinse
- 3. Electroclean in E-Kleen 173 or 153
- 4. Cold water rinse
- 5. Activate surface with immersion in *E-Prep 249*
- 6. Cold water rinse
- Copper strike plate with *E-Brite Ultra Cu-Pb* alkaline non-cyanide copper process for a minimum thickness of .0002"
- 8. Cold water rinse
- 9. Copper plate with *E-Brite 205-K* bright acid copper if desired

## Electrochemical Products Inc.

Call or e-mail for more info: 262-786-9330 us-sales@epi.com 17000 W. Lincoln Ave. New Berlin, WI 53151 USA epi.com • Fax: (262)-786-9403 CAUTION: Do not work with the E-Brite 5.0 Cu solutions or other EPi products without first reading and understanding the SAFETY DATA SHEET furnished by EPi.

The following is made in lieu of all warranties, expressed or implied, including the implied warranties of merchantability and fitness for purpose: seller's and manufacturer's only obligation shall be to replace such quantity of the product as proved to be defective. Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. Neither seller nor manufacturer shall be liable either in tort or in contract for any loss or damage, direct, incidental or consequential arising out of the use or the inability to use the product.