Ultrex AF 16

Product Code: 2001023
Revised Date: 06/19/2006

Ultrex AF 16
Electro Cleaner For Steel & Copper Alloys

Ultrex AF 16 is a specially blended electro cleaner, designed for steel, and copper alloys. It's formulation provides for effective anodic conditioning, preparing the base metal for additional processing in a wide range of plating cycles. **Ultrex AF 16** contains a unique blend of buffers, inhibitors, wetters, conditioners, and alkaline agents.

SPECIAL FEATURES

- Mixed Loads of Steel & Copper Alloys are Processed in Same Tank
- Ability to Provide Combination Soak and Electro Cleaning
- Sufficient Detergency to Emulsify Light to Moderate Oily Films
- Stable, Light Foam Blanket Prevents Corrosive Misting
- Flexible Application in Process Lines

RECOMMENDED APPLICATION ELECTRO CLEANER

	Range	**Optimum**
Conc. (steel & copper alloys)	8-16 oz/gal (60-120 g/l)	12 oz/gal (90 g/l)
Temperature	140-190 deg F (60-88 deg C)	165 deg F (74 deg C)
C D (anodic, rack)	50-120 ASF	As required
C D (anodic, barrel)	10-40 ASF	As required
Voltage (rack)	4-9	As required
Voltage (barrel)	7-10	As required
Time	2-5 minutes	As required
Agitation	Solution movement or mild air	As required

info@hubbardhall.com
P.O. Box 790 ● Waterbury, CT 06720-0790● Tel: (203) 756-5521 ● Fax: (203) 756-9017
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EQUIPMENT

Tank	Mild steel, reinforced polypro, or fiberglass
Heater	Steel coil, steel immersion type, steam fed, or gas fired
Ventilation	Mechanical to maintain levels below permissible exposure limits
Agitation	Stirrer, pump, work movement, or mild air

SOLUTION MAKE UP

Danger!! Ultrex AF 16 contains Sodium Hydroxide. Consult Ultrex AF 16 MSDS sheet before handling this product. It should be handled with all the safety precautions associated with Sodium Hydroxide.

Be sure the process tank has been drained and cleaned. Fill to within two thirds of final operating volume with clean, warm water (100-120 deg F, 38-49 deg C). With good solution stirring, gradually add the required amount of **Ultrex AF 16. Rapid additions may result in localized boiling and spattering!**

After the required amount of **Ultrex AF 16** has been added and dissolved, adjust final solution operating volume and temperature.

ANALYSIS PROCEDURE ULTREX AF 16

Electro Cleaner

The alkaline components are typically consumed in the electrolysis process. Surfactants and detergents are consumed in the cleaning process by emulsifying oils and grease. Drag out of the cleaner bath and replenishment of the bath with water also dilutes the working solution. In double cleaning cycles, drag in of acid into the second electro cleaner will neutralize some of the alkalinity. Regular maintenance additions of **Ultrex AF 16** are recommended to replenish the bath. This can be accomplished by observing quality of cleaning & conditioning and making appropriate additions per requirements of the particular process. Alternatively, the cleaner bath can be analyzed to determine actual concentration of **Ultrex AF 16** and the required addition of product to restore the balanced ratio of all the cleaner components.

The following analysis procedure is recommended:

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1. Pipette a 10 milliliter sample of the cleaner bath into a 250 milliliter Erlenmeyer flask.

2. Add 50-100 milliliters of clean water.

3. Add 2-4 drops of Phenolphthalein Indicator to develop a pink solution color.

4. Titrate with Hydrochloric Acid of known normality, until the pink color has been discharged.

Calculation: (milliliters of titrant) X (Acid Normality) X (0.787) = **Ultrex AF16** (oz/gal)

PROCESS SUGGESTIONS

Electro Cleaning

Ultrex AF 16 working solutions provide sufficient conductivity for excellent scrubbing action, facilitating attack on scales, rust, and smuts. The reserve alkalinity prevents formation of brown iron hydroxide films on steel. For optimum results consult the Recommended Application table for electro cleaning, on pg. 1.

Ultrex AF 16 provides, at best, light duty soak cleaning capability. Your Hubbard-Hall sales representative or the corporate Technical Center will be glad to recommend an appropriate soak cleaner for the specific application.

Hexavalent chromium contamination (only 30 ppm) will also shorten the cleaner bath service life. Stripping of chrome plated rack contacts and chromated barrel danglers are typical sources of hexavalent chromium contamination. Additions of Enerox™* Chrome Reducer CER are recommended to keep the hexavalent chrome contaminant level minimal.

Although tolerance of copper, iron, nickel, and zinc are high, sufficient loading of these contaminants will result in deposition of a black smut. When this occurs the electro cleaner bath should be replaced with a fresh make up.

Ultrex AF 16 is soap free. Therefore no residues are left on cleaned surfaces. With proper post rinsing, parts entering the acid should be water break free.

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PHYSICAL CHARACTERISTICS

Appearance	Free flowing, white to off white mixture
Odor	Slight
Dusty	No
Foaming tendency	Moderate
Maximum Solubility	32 oz/gal at 180 deg F (240 g/l at 82 deg C)

PRODUCT PROFILE

Caustic	Yes
Phosphate	Yes
Silicate	Yes
Complexors (Gluconate type)	Yes
Chelates (EDTA, NTA types)	No

HAZARD CLASSIFICATION

DOT Hazard Class	8 (Corrosive Material)
DOT Shipping Name	Corrosive Solid, Basic Inorganic N.O.S. *
UN Number	1759
Packing Group	II
Guide Number	154

* contains Sodium Hydroxide and Sodium Metasilicate

WASTE TREATMENT & DISPOSAL

Ultrex AF 16 and it's working solutions are alkaline. They may be neutralized with acid to meet local POTW or municipal effluent discharge requirements. Sludges and oils should be separated out before discharge. Spent **Ultrex AF 16** solutions may contain dissolved metals from the cleaning process. Therefore, additional treatment of the solution may be required to meet discharge requirements.

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SAFETY INFORMATION

Please read and understand the **Ultrex AF 16** Material Safety Data Sheet before handling and using this product.

Recommended safety procedures for **Ultrex AF 16** tank make up are described on page 2 of the Technical Data bulletin.

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.

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