



Better Chemistry. Better Business.

Ultrex AF 28 MH

Product Code: 2001036  
Revised Date: 10/2/2013

**Ultrex AF 28 MH**  
Heavy Duty Steel Electro Cleaner

**Ultrex AF 28 MH** is a high conductivity electro cleaner, designed especially for steel and stainless steel. Its formulation provides for effective anodic or periodic reverse conditioning, preparing the base metal for additional processing in a wide range of plating cycles. **Ultrex AF 28 MH** contains a specially blended mixture of deflocculants, wetting agents, conditioners, and alkaline agents.

**SPECIAL FEATURES**

- Excellent Scrubbing Action on Smuts, Scales & Rust
- Rapid Stripping of Chrome Deposits
- Hexavalent Chrome Reducer
- Sufficient Detergency to Emulsify Residual Oils
- Stable, Light Foam Blanket Prevents Corrosive Misting
- Hard Water Tolerant
- Application in Rack Process & Barrel Lines

**RECOMMENDED APPLICATION ELECTRO CLEANER**

	<b>Range</b>	<b>Optimum</b>
Concentration	8-16 oz/gal (60-120 g/l)	12 oz/gal (90 g/l)
Temperature	140-190 deg F (60-88 deg C)	165 def F (74 deg C)
C D (anodic, rack)	50-120 ASF	As required
Voltage (rack)	4-6	As required
C D (anodic, barrel)	10-40 ASF	As required
Voltage (barrel)	7-9	As required
Time	2-5 minutes	As required
Agitation	Solution movement or mild air	As required



## Product Bulletin

Better Chemistry. **Better Business.**

**Ultrex AF 28 MH**

**Product Code: 2001036**  
**Revised Date: 10/2/2013**

The current should be reversed every 7-10 seconds, for equal anodic and cathodic durations.

**Note:** Because of its highly alkaline formulation, **Ultrex AF 28 MH** is not recommended for sensitive metals such as aluminum, brass, and zinc. Your Hubbard Hall Inc. sales representative or the Technical Center can recommend the appropriate ULTREX or ENEROX process to meet the specified cleaning requirements.

### 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 28 MH** contains sodium hydroxide. Consult **Ultrex AF 28 MH** 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 28 MH**. Rapid additions may result in localized boiling and spattering!

After the required amount of **Ultrex AF 28 MH** has been added and dissolved, adjust final solution operating volume and temperature.

### ANALYSIS PROCEDURE

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 28 MH** 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

2

---

info@hubbardhall.com

P.O. Box 790 • Waterbury, CT 06720-0790 • Tel: (203) 756-5521 • Fax: (203) 756-9017  
www.hubbardhall.com



## Product Bulletin

Better Chemistry. Better Business.

### Ultrex AF 28 MH

Product Code: 2001036  
Revised Date: 10/2/2013

can be analyzed to determine actual concentration of **Ultrex AF 28 MH** and the required addition of product to restore the balanced ratio of all the cleaner components.

The following analysis procedure is recommended:

1. Pipette a 5 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 or Sulfuric Acid of known molarity, until the pink color has been discharged

Calculation: (milliliters of titrant) X (Acid Molarity) X (1.355) = **Ultrex AF 2S MH (oz/gal)**

### PROCESS SUGGESTIONS

**Ultrex AF 28 MH** working solutions provide high conductivity for excellent scrubbing action, facilitating attack on scales, rust, and smuts. **Ultrex AF 28 MH** is buffered to protect high current density surfaces from tarnish, etching, and formation of brown iron hydroxide films. For optimum results the suggested operating ranges for **Ultrex AF 28 MH** electro cleaning are recommended. **Ultrex AF 28 MH** is very effective in plating applications where packed flight bar loads (high total surface areas) are processed. Goods such as tubular parts, large chassis, frames, furniture components, and brackets are readily electrocleaner in **Ultrex AF 28 MH**. These parts typically exhibit heat treat & weld scales, rust, and metallic surface smuts.

Hexavalent chromium contamination (only 30 ppm) will also shorten the cleaner bath service life. **Ultrex AF 28 MH** is blended with an effective hexavalent chrome reducer. For applications where excessive stripping of chrome occurs, booster additions of Enerox™. Chrome Reducer CER are recommended to keep the hexavalent chrome contaminant level minimal. If the stripping solution has developed an intense yellow color, with absence of foam, hexavalent chrome reduction is required. Tolerable levels of hexavalent chromium are indicated by a green solution color.

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.

Because of its free rinsing characteristics, **Ultrex AF 28 MH** is particularly suited for systems where rinsing facilities are marginal. **Ultrex AF 28 MH** is soap free. Therefore no residues are left on cleaned surfaces. With proper post rinsing, parts entering the electrocleaner should be water



## Product Bulletin

Better Chemistry. Better Business.

**Ultrex AF 28 MH**

Product Code: 2001036  
Revised Date: 10/2/2013

break free. **Ultrex AF 28 MH** electrocleaner is a good complement to an effective line of Ultrex soak cleaners.

### PHYSICAL CHARACTERISTICS

Appearance	Free flowing, off white powder
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
Chelating agents (Gluconate type)	Yes
Chelates (EDTA, NTA types)	Yes

### HAZARD CLASSIFICATION

DOT Hazard Class	8 (Corrosive Material)
DOT Shipping Name	Corrosive Solid, Basic, Inorganic N.O.S.
UN Number	3262
Packaging Group	II
Guide Number	154

### WASTE TREATMENT & DISPOSAL

**Ultrex AF 28 MH** and its working solutions are alkaline. They may be neutralized with acid to meet local POTW or municipal effluent discharge requirements. Sludge and oils should be separated out before discharge. Spent **Ultrex AF 28 MH** solutions may contain dissolved metals from the cleaning process. Therefore, additional treatment of the solution may be required to meet discharge requirements.

### SAFETY INFORMATION



## Product Bulletin

Better Chemistry. **Better Business.**

**Ultrex AF 28 MH**

**Product Code: 2001036**  
**Revised Date: 10/2/2013**

Please read and understand the **Ultrex AF 28 MH** Material Safety Data Sheet before handling and using this product.

Recommended safety procedures for **Ultrex AF 28 MH** 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.