Ultrex AS 11 R

Ultrex AS 11 R is an alkaline product, blended especially to soak clean a variety of metals, including: brass, copper alloys, and steel. Its formulation provides for excellent removal of oils and grease, preparing the base metal for additional processing in a wide range of finishing cycles. In addition, Ultrex AS 11 R provides enough conductivity and conditioning agents to effectively electro clean steel and copper alloys, prior to acid pickling and activation. Ultrex AS 11 R is also an effective bright dip for parts that have been acid tin plated, in rack or barrel.

Features & Benefits

Rapid, efficient cleaning in standard soak cleaning cycles	Removes stamping, forming, cutting & rust proofing oils
Excellent oil emulsification at recommended operating conditions	Displaces oils on cooling
Stable, light foam blanket prevents corrosive misting	Keeps Polypropylene barrels clean

Physical Data

Appearance	Free flowing, off white powder
Odor	Slight
Dusty	No
Foaming tendency	Moderate
Maximum solubility	14 oz/Gal at 180°F (105 g/L at 82°C)

Operating Conditions

Soak Cleaner

	Range	Optimum
Concentration	6 –12 oz/Gal (45 – 90 g/L)	9 oz/Gal (68 g/L)
Temperature	140°F – 190°F (60°C – 88°C)	165°F (74°C)
Time	2 – 5 min	As required
Agitation	Solution movement or mild air	As required

Note: Below 140°F (60°C), some oils will become displaced in the Ultrex AS 11 R working cleaner bath. If a lower operating temperature is required with emulsification of oils, your Hubbard-Hall technical representative will be pleased to recommend a suitable soak cleaner for this purpose.

Above 15 oz/Gal (112.5 g/L), some of the active surfactants and wetting agents will oil out, forming a surface slick. Therefore, concentrations of Ultrex AS 11 R above 14 oz/Gal (105 g/L) should be avoided.

Electro Cleaner

	Range	Optimum
Concentration	6 – 12 oz/Gal (45 – 90 g/L)	9 oz/Gal (67.5 g/L)
Temperature	140°F – 170°F (60°C - 77°C)	155°F (68°C)
C D (anodic, rack)	50 – 120 ASF	As required
CD (anodic, barrel)	10 – 40 ASF	As required
Voltage (rack)	4 – 6	As required
Voltage (barrel)	7 – 9	As required
Time	2 – 5 min	As required
Agitation	Solution movement of mild air	As required

Bright Dip Following Acid Tin Plating

	Range	Optimum
Concentration	1.5 – 4oz/Gal (11.2 – 30 g/L)	2.5 oz/Gal (18.8 g/L)
Temperature	100°F – 120°F (38°C – 49°C)	110°F (43.3°C)
Time	1 – 3 min	As required

Agitation	Solution movement or mild air	As required

Equipment

Tank	Mild steel, reinforced polypropylene, 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

Be sure the process tank has been drained and cleaned. Fill to within two thirds of final operating volume with clean, warm water (100°F – 120° F, 38°C – 49°C). With good solution stirring, gradually add the required amount of Ultrex AS 11 R. After the required amount of Ultrex AS 11 R has been added and dissolved, adjust final solution operating volume and temperature.

Soak Cleaner

Ultrex AS 11 R is an emulsifying soak cleaner at the recommended operating temperature range. On cooling, a substantial volume of the oils will be released. Therefore, skimming the cleaner to remove oils is recommended. Solutions of Ultrex AS 11 R are also compatible with coalesces and oil removal filters. A process tank fitted with an overflow weir or dam is also recommended. At some point during the bath life, the buildup of oil and grease contaminants will effectively saturate it, beyond which maintenance additions or filtration will not maintain desired performance. When this occurs, the cleaner should be dumped, and a fresh solution prepared. Your Hubbard-Hall technical representative will be glad to help determine optimum bath life.

Ultrex AS 11 R is formulated with a unique wetting system that prevents oils from adhering to polypropylene plating barrels. This greatly minimizes the occurrence of oily contaminants dragging into other down line tanks.

Electro Cleaner

Ultrex AS 11 R working solutions provide enough conductivity for excellent scrubbing action, facilitating attack on scales, rust, and smuts. The reserve alkalinity prevents formation of brown iron hydroxide films on steel.

Hexavalent chromium contamination (only 30 ppm) will also shorten the cleaner bath service life. Additions of Enerox Chrome Reducer CER will efficiently reduce chrome to its trivalent state, precipitating it as Cr^{3+} Hydroxide, thereby extending cleaner life. Because of its free rinsing characteristics, Ultrex AS 11 R is particularly suited for systems where rinsing

facilities are marginal. Ultrex AS 11 R is soap free. Therefore, no residues are left on cleaned surfaces. With proper post rinsing, parts entering the electro cleaner should be water break free.

Combination soak and electro cleaning can be accomplished in the same process tank, or in separate tanks. This capability reduces plant product inventory, minimizes needed space in the process line. It also reduces water consumption since rinsing between the soak and electro cleaner is optional, unless the same tank is used for both operations.

Product Profile

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

* contains Sodium Metasilicate

Soak Cleaner

The surfactants and detergents are consumed in the cleaning process by emulsifying oils and grease. Alkaline components are used up in the cleaning process, such as by saponifying fatty acids. Drag out of the cleaner bath also depletes these active components. Regular maintenance additions of Ultrex AS 11 R are recommended to replenish the bath. This can be accomplished by observing quality of cleaning and making appropriate additions per requirements of the process. Alternatively, the cleaner bath can be analyzed to determine actual concentration of Ultrex AS 11 R and the required addition of product to restore the balanced ratio of all the cleaner components.

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 AS 11 R are recommended to replenish the bath. This can be accomplished by observing quality of cleaning & conditioning and making appropriate additions per requirements of the process.

Titration Method

1. Pipette a 5 mL sample of the cleaner bath into a 250 mL Erlenmeyer flask.
2. Add 50 mL to 100 mL of clean water. Mix well.
3. Add 2 to 4 drops of Phenolphthalein indicator to develop a pink solution color.
4. Titrate with 1.0 N Hydrochloric Acid until the pink color disappears.

5. Record mL used.

Calculation

Concentration (oz/Gal) = mL 1.0 N HCl x 1.613

Test Kit Method

1. Using a 3 mL syringe measure 1/2 mL of sample of the cleaner bath and place in testing bottle. Fill bottle half-way with water.
2. Add 5 to 10 drops of Phenolphthalein indicator.
3. Add 0.72 N Hydrochloric Acid drop-wise while mixing solution until the pink color completely disappears.
4. Record the number of drops used.

Calculations:

Concentration (Oz/Gal) = # Drops 0.72 N HCl x 0.44
Concentration (g/L) = # Drops 0.72 N HCl x 3.33

Waste Disposal

Ultrex AS 11 R 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 AS 11 R solutions may contain dissolved metals from the cleaning process. Therefore, additional treatment of the solution may be required to meet discharge requirements.

Caution

Ultrex AS 11 R contains Sodium Hydroxide. Consult Ultrex AS 11 R SDS sheet before handling this product. It should be handled with all the safety precautions associated with Sodium Hydroxide.

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

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.

Our people. Your problem solvers.

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