Product Bulletin
Product Name: Ultrex RC 10
Product Code: 2001035
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Ultrex RC 10

Ultrex RC 10 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 RC 10 provides enough conductivity and conditioning agents to effectively electro clean steel and copper alloys, prior to acid pickling and activation. Ultrex RC 10, used in mass finishing equipment, is a very effective bulks parts cleaner used in mass finishing equipment, removing bulk oils and grease.

Features & Benefits

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

Physical Data

Appearance	Free flowing, off white powder
Odor	Slight
Dusty	No
Foaming tendency	Moderate
Maximum solubility	24 oz/Gal at 180°F (180 g/L at 82°C)

Product Profile

Caustic	Yes
Phosphate	Yes
Silicate	Yes
Complexors	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	3262
Packing Group	II
Guide Number	154

* contains Sodium Metasilicate

Operating Conditions

Soak Cleaner Barrel & Rack

	Range	Optimum
Concentration	6.5 – 13 oz/Gal (49 – 97.5 g/L)	10 oz/Gal (75 g/L)
Temperature	140°F –190° F (60°C – 88°C)	165 (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 RC 10 working cleaner bath. If a lower operating temperature is required with emulsification of oils, your Hubbard Hall Inc. Sales Representative or the Corporate Technical Center will be pleased to recommend a suitable soak cleaner for this purpose.

Electro Cleaner Barrel & Rack

	Range	Optimum
Concentration (Steel & copper alloys)	8 – 16 oz/Gal (60 – 120 g/L)	12 oz/Gal (90 g/L)
Temperature	140°F – 170°F (60°C – 77°C)	155°F (68°C)
CD (anodic, rack)	50 – 100 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 or mild air	As required

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

Oblique Tumbling Barrels, Vibratory Bowls & Tubs, Horizontal Barrels

	Range	Optimum
Concentration	2 – 6 oz/Gal (15 – 45 g/L)	4 oz/Gal (30 g/L)
Temperature	75°F – 105°F (24°C – 41°C)	90 (32°C)
Media (optional)	Mineral, ceramic, or steel	As required
Ratio of media to parts	12:1 – 1:1	As required
Time	10 – 30 min	As required

Note: Each specific mass finishing application has its own unique operating parameters and conditions. The optimum cycle can be developed by evaluating the effects of media (if required), concentration of Ultrex RC 10, time of process, and mechanical action of the mass finishing equipment being used.

!! CAUTION when processing parts in a sealed horizontal barrel!! When the run is completed stop the barrel. Slowly and carefully open the ventilation valve, to bleed any pressure that may have built up during the process run. Only after this has been done can the barrel be safely opened.

After completing the cleaning cycle, parts should be rinsed, separated from optional media, transferred to an Ultrex or Enerox burnishing step, or prepared for plating or other processing.

The mass finishing equipment used should be suitably lined and compatible with the Ultrex RC 10 process. Consult appropriate sections of this technical bulletin (SDS) and equipment manufacturer source.

Solution Make Up

DANGER!! Ultrex RC 10 contains Sodium Hydroxide. Consult Ultrex RC 10 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°F to 120°F, 38°C to 49°C). With good solution stirring, gradually add the required amount of Ultrex RC 10. After the required amount of Ultrex RC 10 has been added and dissolved, adjust final solution operating volume and temperature.

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 RC 10 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 RC 10 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 RC 10 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.

Process Suggestions

Soak Cleaner

Ultrex RC 10 is an emulsifying soak cleaner at the recommended operating temperature range. Ultrex RC 10 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.

On cooling, a substantial volume of the oils will be released. Therefore, skimming the cleaner to remove oils is recommended. Solutions of Ultrex RC 10 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. The Technical Center or your Hubbard Hall Inc. sales representative will be glad to help determine optimum bath life.

Electro Cleaner

Ultrex RC 10 working solutions provide enough conductivity in the barrel application, 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 check the

Recommended Application table for electro cleaning. Hexavalent chromium contamination (only 30 ppm) will also shorten the cleaner bath service life. Additions of chrome reducer 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 RC 10 is particularly suited for systems where rinsing facilities are marginal. Ultrex RC 10 is soap

free. Therefore, no residues are left on cleaned surfaces. With proper post rinsing, parts entering the acid 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 and 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.

Titration Method

1. Pipette a 10 mL sample of the cleaner bath into a 250 mL Erlenmeyer flask.
2. Add 50 to 100 mL of clean water.
3. Add 2 to 4 drops of Phenolphthalein indicator to develop a pink solution color.
4. Titrate with Hydrochloric or Sulfuric Acid (titrant) of known normality (1.0 Normal is recommended) just until the pink color has been discharged.
5. Record mL used.

Calculation

Concentration (oz/Gal) = (mL Acid Titrant) x (Normality) x (1.0)

Waste Disposal

Ultrex RC 10 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 RC 10 solutions may contain dissolved metals from the cleaning process. Therefore, additional treatment of the solution may be required to meet discharge requirements.

Caution

Please read and understand the Ultrex RC 10 Safety Data Sheet before handling and using this product.

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