AQUABOND
Chemistry for Tomorrow

# Uberkote™ Cd

**Cadmium Plating Process**

Ukerkote Cd is an efficient process characterized by excellent throwing power that produces a smooth ductile deposit over the entire range of barrel and rack plating current densities. It features wide operating temperature range, simplicity of control and outstanding economy. The single -additive formulation assures a well-balanced, highly stable system.

Features/Benefits

- Brilliant, fine grained deposit over wide current-density range.
- Designed for rack or barrel use.
- Improves covering and throwing power.
- Deposit readily accepts chromate conversion coating.
- Excellent operating life and economy.

Operating Conditions

| | Optimal | Range |
|---|---|---|
| Cadmium Metal Rack | 21 g/L | 18 - 22.5 g/L |
| Cadmium Metal Barrel | 18 g/L | 15 - 26 g/L |
| Sodium Cyanide | 127 g/L | 105 - 157 g/L |
| Sodium Hydroxide Rack | 11.25 g/L | 7.5 - 15 g/L |
| Sodium Hydroxide Barrel | 26 g/L | 15 - 34 g/L |
| Sodium Carbonate | 15 g/L | 15 - 60 g/L |
| CN:Metal Ratio | 6 : 1 | |
| Temperature | 29°C (85°F) | 24 - 35°C (75 - 95°F) |
| Anode Current Density | 25 ASF / 2.5 amps/$dm^2$ | 20 - 30 ASF / 2 - 3 amps/$dm^2$ |

Uberkote™ Cd Make-Up

| | | |
|---|---|---|
| Cadmium Oxide Rack | 24 g/L | |
| Cadmium Oxide Barrel | 20.5 g/L | |
| Sodium Cyanide | 127.5g/L | *Dissolve prior to adding* |
| Sodium Carbonate | 15 g/L | |
| Uberkote™ Cd | 1% b.v. | |

The Sodium Cyanide is dissolved in a storage tank with warm water. The required amount of cadmium oxide is added and stirred vigorously until it is dissolved. The solution should then be filtered into the plating tank and Uberkote™ Cd added, as required. Hull Cell plating test can aid in determining the proper initial addition of Uberkote™ Cd. Dummy plate for 1 - 2 hours to



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remove contamination. At this point, the caustic should be analyzed and adjusted to recommended level.

**Uberkote™ Cd**: is the brightener component of the bath. A new bath will require a charge of 1L per 100L of plating solution. Starting point for regular additions will be 500mL per 8 hour shift per 4000L of plating solution. Regular maintenance addition of 500mL Uberkote™ Cd for each 4.75kg of Sodium Cyanide added should be made after the recommended level is achieved.

**Cadmium Metal**: Low Cadmium in the plating solution will cause poor covering power and dullness and/or burns in the LCD. Increase anode area or add Cadmium Oxide. High Cadmium will give poor throwing power and dull the LCD. Reduce anode area or dilute bath if necessary. Measure cadmium frequently and adjust as needed.

**Sodium Cyanide**: is the baths electrolyte and maintains throwing power. Low cyanide will dull LCD, drop cadmium concentration and allow carbonate to build up. High cyanide may produce slight haze in the LCD. Measure cyanide concentration frequently and adjust as needed.

**Sodium Carbonate**: Sodium Carbonate concentration should be held between 15 - 60 g/L for best results. A new solution should be started with only 15 g/L. If permitted to rise above 60 g/L the resulting deposit will have a dull appearance. Excess carbonate can be removed by precipitation after cooling the bath to 1 - 4°C then decanting and filtering.

**Sodium Hydroxide**: maintains the bath alkalinity. Low caustic can cause stained deposits and anode polarization, as well as reduce cadmium concentration and allow carbonate to build up. Measure sodium hydroxide frequently and adjust as needed.

**Tanks**: Mild steel is suitable.

**Anodes**: 99.5% high purity cadmium (copper and lead free) contained in Titanium anode baskets.

**Ventilation**: Forced ventilation recommended.

**Filtration**: Continuous filtration is required with 1 - 2 turn over per hour.

**Temperature**: Solution should be run between 24 - 35°C (75 - 95°F). Typically the bath runs at acceptable temperature under ambient conditions. Heat or Cool to maintain in range, if required.

*The data and statements contained in this bulletin are based on testing information and are believed to be accurate and reliable. This bulletin is not a Guarantee or Warranty, express or implied regarding the products use. The product is sold on the condition that the purchaser will do their own tests to determine the suitability of the product in a particular application.*
**READ THE SDS BEFORE USING THIS PRODUCT**



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