

# Accu-LABS INC.

4831 S. Whipple Avenue  
Chicago IL 60632  
Phone: 773.523.3100 Fax: 773.523.4008  
[www.accu-labs.com](http://www.accu-labs.com)

**A2LA Accredited ISO/IEC 17025:2005 Certificate # 2558.01**

## **973-CO**

### ***COBALT ADDITIVE FOR ALKALINE COBALT-ZINC PLATING***

**Accu-Labs 973-CO** is a liquid cobalt additive use with **Accu-Labs 940** alkaline zinc brightener to make a cobalt-zinc alloy plating system. Cobalt alloy deposits have been found to offer much greater protection when applied to steel components and produce a several fold increase in protection when compared with un-alloyed zinc deposits.

#### **ADVANTAGES**

- Simple operation-similar to standard alkaline zinc
- Bright finish with superior adhesion and ductility
- Excellent zinc alloy deposit distribution
- Easily accepts all heavy chromate coatings
- Suitable for rack and barrel
- Stable single component brightener system
- Operation at high temperature – up to 120°F
- Easy conversion of Existing baths
- Wide operating range

#### **APPLICATION**

Accu-Labs 973-CO is easy to use and maintain as compared with most other cobalt alloy systems available in the market. Accu-Labs 940 is the single component brightener and 973-CO is the ready to use cobalt complex concentrate that will supply cobalt ions to the alloy bath. An addition of 0.1% by volume of 973-CO to the plating bath increases the cobalt ion concentration by 10 PPM or 10 MG per liter.

#### **CONCENTRATION**

The amount of 940-CO to be added to the bath would depend whether the bath is brand new or has been in use for some time for zinc electroplating. The following is the recommended guidelines based on 100 gallons of new plating bath made up to the recommended ranges for zinc and caustic soda.

## New Bath

1. Dissolve 1.0 to 2.0 pound of Accu-Labs 945 water conditioner
2. While stirring, add 2.5 gallons of Accu-Labs 940 Brightener
3. While stirring, add one gallon of Accu-Labs 973-CO

## Existing Bath Conversions

Existing baths generally have iron as built up impurity which acts like cobalt. It is therefore recommended to have a complete bath analysis and perform Hull Cell tests in the laboratory, especially if the zinc-cobalt deposit has to be blackened. Generally, an existing bath requires lesser amount of cobalt ions to produce a satisfactory black conversion coating:

1. Dissolve 1.0 to 2.0 pound of Accu-Labs 945 water conditioner
2. While stirring, add predetermined amount of Accu-Labs 973-CO
3. Begin brightener maintenance with Accu-Labs 940

## MAINTENANCE AND CONTROL

	<u>BARREL</u>	<u>RACK</u>
Zinc Metal	1.0 – 2.0 oz/gal	0.8 – 1.6 oz/gal
Sodium Hydroxide	12.0 – 18.0 oz/gal	10.0 – 18.0 oz/gal
940 Brightener	As determined by Hull Cell Tests	
Cobalt Metal*	50 – 120 PPM	30 – 100 PPM

\* ANODES  
Zinc anodes with bags  
Or, Nickel plated steel anodes.\*

- When zinc anodes are not used, it is suggested that a zinc replenishment tank fitted with an adequate filter be installed to pump solution from replenishment tank to the plating tank.

**HANDLING:** Always wear eye protection and personal protective gear when handling or working with this or any chemical product. Read MSDS prior to use.

## DISCLAIMER

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