

# ACCU-LABS INC.

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

## **622-M PREMIUM TRIVALENT BLUE CHROMATE FOR ZINC**

**ACCU-LABS 622-M** is a liquid trivalent chromate product that provides a clear-blue bright chromate conversion coating on electroplated zinc. 622-M has been approved for use by Delphi® and other OEMs.

**ACCU-LABS 622-M** is formulated for a thicker, bluer finish than conventional blue bright dips providing up to 120 hours salt spray to white rust; per ASTM B-117. Additional salt spray protection of up to 250 hours can be achieved by using **ACCU-LABS KSN Sealer** post dip.

### **FEATURES**

1. Provides a blue-bright finish that is reproducible load after load.
2. Equally effective for alkaline non-cyanide to acid chloride, barrel to rack.
3. High tolerance to impurities and yellowing, long solution life.
4. Contains no fluoride compounds.
5. Low zinc removal properties at low current densities.
6. Decreases waste treatment requirements due to low trivalent chrome characteristics.
7. Retains blue-bright finish and good corrosion resistance after 400°F bake cycles of 1 to 4 hours.

### **OPERATING GUIDELINES**

<b>ACCU-LABS 622-M:</b>	2 - 10% by volume (4% typical)
Temperature:	65°-110°F (increased temperature can enhance corrosion protection)
pH:	1.8-2.8 (2.5 optimum for best corrosion protection; use pH meter calibrated with 2.0-4.0 buffers)
Dwell Time:	15-90 seconds (increased dwell time will enhance corrosion protection especially at higher pH values)

## **SOLUTION CONTROL**

The concentration of **Accu-Labs 622-M** is consumed by the chromating process and by drag in and drag out, diluting the bath. Air agitation is recommended. Filtration can greatly extend the solution life.

A start-up concentration of 4% is typical. The operating solution is maintained by pH monitoring (controlling between 2.30 – 2.70 for best corrosion resistance) and observing the work being processed. Factors such as temperature, dwell time, drag-in and drag-out can affect the usage rate.

## **CHROMIUM TITRATION METHOD**

1. Pipette a 20 ml sample into a 250 ml Erlenmeyer flask.
2. Add 50 ml DI water.
3. Add 25 ml of 1N (40 g/l) sodium hydroxide solution
4. Add 0.5 ml (10 drops) of 35% hydrogen peroxide.
5. Boil for at least 1 hour; during this time boil the solution down to nearly dry (5-10 mls). Then carefully add 50 ml DI water and 1 ml nickel sulfate (10%) solution and continue boiling for an addition 10-20 minutes.
6. Remove from hot plate and allow solution to cool.
7. After cooling add 50 ml DI water, 1 gram of ammonium bifluoride.
8. Add 20 mls of 25% sulfuric acid and 10 mls potassium iodide solution (10%).
9. Immediately titrate the solution with 0.1N sodium thiosulfate solution to a straw colored tint then add 2-6 mls starch indicator. Continue titrating from a blue to a colorless end point. Mls of thiosulfate x 0.355 = % by vol. **622-M**

Reduce pH with **622-M** or increase with dilute liquid caustic soda; however, it is preferable to allow the pH to rise by processing parts rather than by caustic additions especially on new bath start up. **Accu-Labs 622-M** solution concentrations may be controlled by analysis of chromium using a suitable AA procedure. The total chromium content of **Accu-Labs 622-M** is 25 grams per liter.

**EQUIPMENT:** Process tanks may be polypro, PVC or Koroseal lined steel. Heating and/or cooling coils may be made of titanium, 300 series stainless steel, Teflon, or use quartz heaters.

**SAFETY:** **ACCU-LABS 622-M** contains trivalent chrome, compounds, and is acidic in nature. Avoid contact with skin or eyes. Wear protective gear and eye protection when working with this product; read MSDS prior to use.

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