

TECHNICAL DATA SHEET

TRIKOTE BL – 710

TRIVALENT BLUE CHROMATE PASSIVATION FOR ZINC

Trikote BL-710 is a clear blue chromate passivations process based on trivalent chromium and designed to provide 2-3 times better corrosion resistance as compared to conventional hexavalent chromium based blue chromating process.

Trikote BL-710 is suitable for passivations of zinc deposit produced from cyanide, alkaline cyanide free, chloride zinc and cobalt zinc electrolytes and can be used in vat and barrel installations. It produces bright blue protective coating. The temperature resistance of the chromate coating has a particular advantages as it stands higher temperature (1 hour at 120°C).

Trikote BL-710 does not attack the zinc deposit as in the case of hexavalent blue chromate and hence the solution has a long life. The product is supplied in liquid form which is very convenient to use and available in 20 liter, 5 and 1 liter plastic containers.

FEATURES & BENEFITS :

FEATURES:

- Contains no Hexavalent chromium
- Consistently produces Blue-Bright Finish.
- Longer Bath life and extended dump frequency
- Provides higher corrosion resistance
- Uses existing equipment and process cycle.

BENEFITS:

- Reduces Waste treatment and Disposal costs.
- Minimum Rejection and high profitability
- Increases productivity
- Extends the useful life of plated components.
- No extra expense and easy to change over.

EQUIPMENT:**TANK:**

Steel tanks lined with polyethylene, polypropylene or PVC is suitable for containing the passivations solution.

AGITATION:

For rack plating, agitation of the part or solution agitation is recommended for getting uniform results. PVC or polypropylene coils are to be used.

SOLUTION MAKE-UP:

Fill the tank with $\frac{3}{4}$ of its volume with water and add the measured quantities of TriKote BL-710 and stir the solution well. Add more water to make up the level. Measure the pH and adjust the pH 1.6-2 by adding Nitric acid.

OPERATING CONDITIONS:

TRIKOTE BL-710	50-80 cc/l
Nitric acid (42° Be)	1-2 cc/l
Immersion Time	20-30 sec
Solution pH (electrometric)	1.8-2.2
Solution Temperature	Room

PRE AND POST TREATMENT:

It is advisable to rinse and chromate passivate the plated components immediately after electroplating and we recommend to have an activation step by using 2-3 cc/l nitric acid.

The passivated parts must be rinsed using counter flow rinse and subsequently dried using warm air.

To improve further the corrosion resistance of the chromate parts, these should be given a protective coating by using Metaurd 1000.

MAINTENANCE:

The operating solution can be maintained at its best by adding regular additions of Trikote BL-7100 and Nitric acid for pH adjustment. The additions should be generally based on analytical control until a regular maintenance schedule has been established.

The replenishment can be made on the basis of surface area processed and as a rough guide additions of Trikote BL-710 can be made at the rate of 10 ml /liter after working 100dm²/liter

ANALYTICAL CONTROL:**REAGENTS NEEDED:**

- 0.1 N Sodium Thiosulphate solution.
- 10% potassium Iodide Solution.
- 0.5% starch Indicator.
- Concentrated sulphuric acid.
- Ammonium persulphate.

APPARATUS REQUIRED:

- 50 ml Burette ----- one
- 250 ml Erlenmeyer ----- Two nos.
- 100 ml Graduated Cylinder ----- One
- 25 ml pipette ----- One

PROCEDURE:

- Pipette 25 ml of the sample to be analysed into a 250 ml of Erlenmeyer flask and add 100 ml distilled or deionised water.
- Add 3-5 concentration Sulphuric Acid, 2 Gms Ammonium Persulphate and if chloride is present in the solution add 10 ml of 10% Silver Nitrate Solution.
- Boil gently for 20-30 minutes until the solution colour, should changes to yellow without any traces of green or blue colour.

- Cool the solution to room temperature and add 20-30 ml of 10 % Potassium Iodide Solution to the flask.
- Titrate with 0.1N Sodium Thiosulphate solution to a light yellow colour and a few ml of starch indicator and continue titrating with the thiosulphate solution until the solution changes to light green colour.

CALCULATION:

$$\text{Trikote BL-710 g/l} = V \times N \times 25.5$$

Where V = ml of thiosulphate solution used for titrating.

N= normality of the sodium thiosulphate solution.

EFFLUENT TREATMENT:

The TriKote BL-710 contains trivalent chrome compound. The pH has to be adjusted to 9.0 with lime and the precipitated heavy metals are to be removed and the clear liquid can be discarded.

CAUTION:

The TriKote BL-710 concentrate and the operating solution are acidic in nature and these are to be handled with care. Nitric acid can cause severe burns to skin and eyes. Use protective clothing, safety glasses and face mask when using this material. In case of contact flush the affected areas with good quantities of clean, cold water.

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