



K-TECH TRI YELLOW 96

SINGLE-DIP “TRIVALENT YELLOW” CHROMATE FOR ZINC

- ✦ K-TECH TRI YELLOW 96 chromate baths can be managed for a longer period of months without being discarded as it has a longer operating period compared to numerous other trivalent chromates. Alternatively, instead of discarding, the chromate baths can be transferred and “energized” once every few weeks.
- ✦ The rejected parts rate will be reduced with the exceptional tolerance to organics.
- ✦ Similar to hexavalent chromate, trivalent chromate works the same way.
- ✦ Provides simple single dip application of two part system with wide operating parameters. When pair up with K-Tech Tri-H Hi Top, it allows well over 120 hours to white salts without ruining the corrosion resistance.
- ✦ The product does not contain any hexavalent chromium and has a consistent color. Depending on the concentration make up, it can range from light yellow to deep brass.

COMMON OPERATING INFORMATION

SOLUTION MAKEUP	RANGE	RECOMMENDED
CONCENTRATION (PART A – K-TECH TRI BLUE 48)	6% to 12% by volume	10% by volume
CONCENTRATION (PART B – K-TECH YELLOW “B”)	0.75% to 2.5% by volume	1.0 to 1.5% by volume
TEMPERATURE	70° F to 85° F (21° to 30° C)	80° F (27° C)
DIP TIME	30 to 70 seconds	45 seconds
pH	1.7 to 2.2	2.0

Note: Depending on the concentration and the maturity of the chromate, the dip duration can fluctuate.

TITRATION METHOD

1. In a 250 ml flask, pipette a 10ml sample of the chromating solution.
2. Add 100 ml of distilled water.
3. Add 2 grams of hydrogen peroxide solution and mix until dissolved.
4. Add 2 ml of 30% hydrogen peroxide and boil for at least fifteen minutes (this is an important step).
5. Cool solution to room temperature.
6. Add 10 ml of 1:1 sulfuric acid with mixing.
7. Add 5 ml of 10% Potassium Iodide solution.
8. Using 0.1N Sodium Thiosulfate solution, titrate the solution to a straw yellow endpoint.
9. Add 2 ml of starch indicator solution (solution will turn blue).
10. Continue until the blue solution turn to a clear endpoint.

$$\text{||} \text{ CALCULATION: } \text{ML. X N X 6.74} = \% \text{ BY VOLUME OF K-TECH TRI YELLOW 96 } \text{||}$$

HELPFUL HINTS

- When measuring pH, ensure the usage of a calibrated pH meter with a 1.0 standard. Do note that in general, pH paper will give a reading of 0.5 units higher than the actual reading.
- When using trivalent chromate based conversion coating, to prevent losing the “healing power” like the traditional hexavalent product, it is best to prevent excess scratch on the parts (with finished trivalent coating). If process or application will provide excess scratching, the K-Tech Tri-H Hi Top can be used.

USUAL PROCESS FOR K-TECH TRI YELLOW 96

1. ZINC PLATE
2. RINSE
3. RINSE (OPTIONAL)
4. NITRIC/SULFURIC DIP
5. K-TECH TRI YELLOW 96 (USING A DIP TIME OF 45 – 70 SECONDS)
6. RINSE
7. SPIN DRY

MAINTENANCE AND CONTROL

To ensure accuracy on the concentrate, sporadic titrations should be performed. Analysis can be done on part A concentration [K-Tech Tri Blue 48 (also Part A Yellow 96)] for maintenance and control. As for Part B concentration (K-Tech Yellow B), it can be carried out by dragging out and perform a visual inspection. Addition of Nitric Acid or Sulfuric Acid (preferred) can be used to make adjustment to the pH (if pH is high).

The operating life of the chromate can be lengthened if it is given a pre-dip of 0.5% Nitric Acid by volume (preferably 1.0% Sulfuric Acid by volume, which will extend bath life and increase salt spray protection) followed by a fine, fresh water rinse directly in front of the K-TECH TRI YELLOW 96 tank. With the mentioned process, it will give the chromate an easier control and longer lasting operating period. The hot water rinse in the final stage should range between 90° to 110° (32° to 43° C). Discoloration on the chromate will occur if the water is too hot (not within the mentioned range) during the final rinse.

SALT SPRAY TESTING

- ❖ To cure between 48 to 72 hours for optimum performance.
- ❖ Zinc deposits must be .0003 which is equivalent to 7.6µm.
- ❖ Limited amounts of handling to prevent scratching, oil, salts or other harmful contaminants prior to testing.
- ❖ Salt spray to be done per ASTM B117.

STORAGE AND HANDLING

K-TECH TRI YELLOW 96 contains strong mineral acids and chromium elements that are corrosive to eyes and skin. It is a necessity to use preventive care such as goggles and rubber gloves. The product should be stored in a ventilated and clean area with a room temperature of no less than 45° F (7° C). In the event of accidental contact, flush with plenty of water immediately and remove contaminated apparels. Refer to the MSDS for a more complete detail on handling the material.

Additional Information:

FREEZABILITY: If freezing is required, it should take place during the period of the storage or transportation. However, like most chemical products, it would be best to avoid freezing.

- If K-TECH TRI YELLOW 96 is frozen, before usage, do warm the product and it should be mix thoroughly until precipitates are totally liquefied.

EQUIPMENT

Stainless steel, Koroseal, PVC or rubber lined steel, or polypropylene should be used for assembling the chromate tanks.

NON-WARRANTY

Keane Chemical LLC believes that all the information listed on this sheet is complete, factual and precise. However, there will be no guarantee that the outcome acquired by the customer will be as listed in this sheet given that the ultimate process of usage will be fully utilized by the customer and out of our authority. Therefore, we will not claim any liability on the handling of this product by the customer in any case which may violate the patents of the third parties.