



K-TECH TRI BOND YELLOW 120

SINGLE DIP PROCESS CHROMATE FOR ZINC AND CADMIUM

- ✚ An economical solitary dip procedure consisting of two components, K-Tech Hi Bond and K-Tech Tri Yellow 96 that supplies over 250 hours to white corrosion in a 5% neutral spray (ASTM B 117) as compared to 96 hours typical yellow chromates as specified by ASTM B 201.
- ✚ Compatible with cyanide, alkaline non-cyanide and acid zinc systems with an intense yellow to bronze conversion coating over zinc and cadmium.
- ✚ Brilliant dye receptivity and easy to control as it is assembled under strict SPC monitoring.

COMMON OPERATING INFORMATION

SOLUTION MAKEUP	RANGE	RECOMMENDED
CONCENTRATION (K-TECH TRI YELLOW 96)*	1% to 2% by volume	
CONCENTRATION (K-TECH HI BOND)**	1% by volume	
TEMPERATURE	70° F to 80° F (21° to 27° C)	
DIP TIME	30 to 75 seconds	
pH	1.5 to 2.0	

* K-Tech Tri Yellow 96 is a dark red liquid with a pH of 1.7 to 2.2.

** K-Tech Hi Bond is a clear colorless liquid with a pH of 0.5 to 2.5 and specific gravity of 1.036.

TITRATION METHOD

Components:

- a. 1:1 sulfuric acid
- b. 10% Potassium Iodide
- c. 0.1N Sodium Thiosulfate
- d. Starch mixture

Method:

1. In a 250 ml flask, pipette a 5 ml sample of the solution.
2. Add 100 ml of distilled water.
3. Add 10 ml of 1:1 sulfuric acid with mixing.
4. Add 5 ml of 10% Potassium Iodide solution.
5. Using 0.1N Sodium Thiosulfate solution, titrate the solution to a light straw endpoint.
6. Add 2 ml of starch indicator solution (solution will turn dark blue).
7. Continue until the dark blue solution turn to a clear endpoint.

Note: The ratio of addition should be the same – example when adding a gallon of K-Tech Hi Bond, a gallon of K-Tech Tri Yellow 96 should be added.

✚ CALCULATION: **ML. X STANDARD THIOSULFATE X 0.366 = % BY VOLUME OF K-TECH TRI BOND YELLOW 120** ✚

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. For this product, pH paper should not be used.

USUAL PROCESS FOR K-TECH HI BO

1. ZINC OR CADMIUM PLATE
2. RINSE (COUNTER FLOW – 2 STATIONS)
3. 0.5% NITRIC ACID BRIGHT DIP
4. RINSE (OPTIONAL)
5. K-TECH TRI BOND YELLOW 120 (USING A DIP TIME OF 30 – 75 SECONDS)
6. RINSE (COUNTER FLOW – 2 STATIONS)
7. DRY

SOLUTION MAKE UP (PER 378.5 L OR 100 GALLONS)

Cleaned tank should be used for this process and if using previously used (that contains other solutions) or new tanks, leaching is highly recommended. Procedures recommendation for the bath make up is as followed:

- At room temperature, add distilled water to the 75% of the working volume solution.
- Add 1% to 2% of K-Tech Tri Yellow 96 and mix well.
- Then, add 1% of K-Tech Hi Bond and mix well.
- At room temperature, take the level to the ultimate working level with distilled water.

MAINTENANCE AND CONTROL

Maintenance of the K-Tech Tri Bond Yellow 120 should be done by analysis and K-Tech Hi Bond should be added per the 1:1 ratio with K-Tech Tri Yellow 96. To maintain the pH, nitric acid additions can be used whenever it's necessary.

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 BOND YELLOW 120 contains strong hazardous 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. In the event of accidental contact, flush with plenty of water immediately and remove contaminated apparels. When accidental spill occurs, reducing medium such as sodium bisulfate or sodium hydrosulfite can be used and lastly it can be neutralized with soda ash. Containers should not be reused for any other functions. The disposal and rinsing should be performed in a few steps. First, the hexavalent chromium must be reduced to trivalent chromium. It is followed by precipitating the trivalent chromium as chromium hydroxide. Lastly, the chromium hydroxide should be removed and disposed. Refer to the MSDS for a more complete detail on handling the material and disposal requirements.

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 BOND YELLOW 120 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, fiberglass or polypropylene should be used for assembling the chromate tanks and dipping baskets. When using racks, it should be coated with plasitsol. Ventilation is not usually required, however, it is best to check the local rules and regulations or requirements. The use of mechanical agitation is recommended and transfer of solution should be performed either by mixing, part transferring or pumping.

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.