



## ***K-TECH ALKALINE SHIELD BATH***

### ***ZINC BRIGHTENER ALKALINE BATH***

- ✚ Proficient bath that offers a brightening structure that is appropriate for both barrel and rack process. Compatible with all chromate conversion coatings and the bath do not consists of any chelating instruments.
- ✚ Outstanding bond and ductility with exceptional chromate receptiveness and can accept temperature up to 110°F (43°C).
- ✚ Purifier addition is not required and can be utilized in solutions based for potassium and sodium. Superb zinc deposit allocation that is equivalent to chloride zinc shine providing a bright finish.

### **COMMON OPERATING INFORMATION**

#### **FOR BARREL OPERATION**

<b>SOLUTION MAKEUP</b>	<b>RANGE</b>	<b>RECOMMENDED</b>
<b><u>POTASSIUM HYRROXIDE BATH</u></b>		
<b>POTASSIUM HYDROXIDE</b>	14 to 25 oz/gallon OR 105 to 187 g/liter	24 oz/gallon OR 180 g/liter
<b>ZINC</b>	0.8 to 1.8 oz/gallon OR 6 to 13.5 g/liter	1.0 oz/gallon OR 7.5 g/liter
<b><u>SODIUM HYDROXIDE BATH</u></b>		
<b>SODIUM HYDROXIDE</b>	16 to 20 oz/gallon OR 120 to 150 g/liter	18 oz/gallon OR 130 g/liter
<b>ZINC</b>	1 to 3 oz/gallon OR 7.5 to 22.5 g/liter	2.2 oz/gallon OR 16.5 g/liter
<b><u>K-TECH SHIELD START</u></b>	1% to 5%	2%
<b><u>K-TECH SHIELD BRIGHT</u></b>	0.05% to 0.2%	0.1%
<b><u>PRESENT CONCENTRATION</u></b>	1 to 25 ASF OR 0.1 to 2.7 ASD	5 to 10 ASF OR 0.5 to 1.1 ASD

#### **FOR RACK OPERATION**

<b>SOLUTION MAKEUP</b>	<b>RANGE</b>	<b>RECOMMENDED</b>
<b><u>POTASSIUM HYRROXIDE BATH</u></b>		
<b>POTASSIUM HYDROXIDE</b>	14 to 25 oz/gallon OR 105 to 187 g/liter	20 oz/gallon OR 150 g/liter
<b>ZINC</b>	0.8 to 1.8 oz/gallon OR 6 to 13.5 g/liter	1.0 oz/gallon OR 7.5 g/liter
<b><u>SODIUM HYDROXIDE BATH</u></b>		
<b>SODIUM HYDROXIDE</b>	16 to 20 oz/gallon OR 120 to 150 g/liter	18 oz/gallon OR 130 g/liter
<b>ZINC</b>	1 to 3 oz/gallon OR 7.5 to 22.5 g/liter	1.8 oz/gallon OR 13.5 g/liter
<b><u>K-TECH SHIELD START</u></b>	1% to 6%	2%
<b><u>K-TECH SHIELD BRIGHT</u></b>	0.05% to 0.2%	0.1%
<b><u>PRESENT CONCENTRATION</u></b>	3 to 120 ASF OR 0.3 to 13 ASD	10 to 25 ASF OR 1.1 to 2.7 ASD

## TITRATION METHOD FOR ZINC

### Components:

- Acetate Buffer – for the solution, dissolve 180 grams of sodium acetate, 30 ml of acetic acid and add distilled water to get 1 liter of solution.
- Xylenol Orange Indicator – for solution, use 1 gram of Xylenol Orange and mix it in 1 liter of distilled water.
- 0.1N EDTA Solution

### Method

- In a 400 ml flask, pipette a 5 ml sample of the solution.
- Add 150 ml of distilled water.
- Add 5 ml of 30% Hydrochloric Acid.
- Add 50 ml Acetate Buffer.
- Add Xylenol Orange Indicator.
- Using 0.1N EDTA solution, titrate the solution from red to yellow endpoint.

**WARNING: IF USING THIS METHOD WITH A CYANIDE BATH, THE FUMES ARE POISONOUS.**

‡ CALCULATION:  $ML. \times TITRATION \times 0.176 = ZINC \text{ IN OZ/GALLON OR } ML. \times TITRATION \times 1.32 = ZINC \text{ IN G/LITER}$  ‡

## TITRATION METHOD FOR SODIUM/POTASSIUM HYDROXIDE

### Components:

- Indigo Carmine Indicator
- 1N Acid

### Method

- In a 125 ml flask, pipette a 5 ml sample of the solution.
- Add 10 ml of distilled water.
- Add 5 drops of Indigo Carmine Indicator.
- Using 1N Acid solution, titrate the solution from yellow to blue endpoint.

‡ CALCULATION:  $ML. TITRATION + OZ/GALLON ZINC = SODIUM \text{ HYDROXIDE IN OZ/GALLON}$  ‡  
 ‡ CALCULATION:  $ML. TITRATION + OZ/GALLON ZINC \times 1.4 = POTASSIUM \text{ HYDROXIDE IN OZ/GALLON}$  ‡

## 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.

## SOLUTION MAKE UP (PER 3785 L OR 1000 GALLONS)

### **SODIUM HYDROXIDE**

Procedures recommendation for the bath make up is as followed:

- Put 500 gallons or 2,000 liters of water in a steel tank.
- Take 600 pounds or 265 kg of sodium hydroxide and liquefy with the water.
- Add 100 gallons or 375 liter of Zincate (ZB 1300) concentrate.
- Then, add 20 gallons of K-Tech Shield Start.
- Add warm water till the solution reach the 1000 gallon or 3785 liter level.
- Add K-Tech Shield Bright to the first part, only if required or necessary.

## POTASSIUM HYDROXIDE

Procedures recommendation for the bath make up is as followed:

- Put 500 gallons or 2,000 liters of water in a steel tank.
- Take 600 pounds or 265 kg of potassium hydroxide and liquefy with the water.
- Add 100 gallons or 375 liter of Diamante Zincate (ZB 1310) concentrate.
- Then, add 20 gallons of K-Tech Shield Start.
- Add warm water till the solution reach the 1000 gallon or 3785 liter level.
- Add K-Tech Shield Bright to the first part, only if required or necessary.

## ADDITIONAL INSTRUMENTS

Alkaline Zinc Wetter: If misting starts to produce, use 0.01% by volume.

K-Tech Shield Pure: If purifier is necessary, use 0.1% by volume.

Water Conditioner: Use only when requested by Keane Chemical.

## MAINTENANCE AND CONTROL

Maintanenance of the zinc solution should be done by analysis controlled with the generator tank and sodium or Potassium hydroxide should be performed by analysis. The K-Tech Shield Start can be maintained by drag out where as the K-Tech Shield Bright should be maintained with 1 gallon/20,000 to 30,000 amp hours which is equivalent to 1 liter/5,000 to 8,000 amp hours.

## SALT SPRAY TESTING

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

## EQUIPMENT

Low alloy steel tank should be used for assembling the chromate tanks (contact Keane Chemical for the tank parameter). Titanium heat exchanger is suggested for heating and cooling for control purposes. Ventilation should be performed and the use of air agitation is not recommended. Nickel plated S-hooks, copper anode bars that is guarded with plastic is recommended. For rectifier, use up to 18 volts for barrel process and 9 volts for rack procedure. During the filtration process, use 5 to 15 micron polypropylene cartridges or disks and the speed should be at minimum 1 tank per hour. The K-Tech Alkaline Shield Bath process is tolerable to temperature ranging from 60°F to 110°F (18°C to 43°C).

## 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.