

## TECHNICAL DATA SHEET

### TECH BRIGHT AZ 2014

Tech Bright AZ 2014 is a new generation chloride Zinc plating system specifically formulated for installations that operates at warm conditions ( above 40°C ) for either rack or barrel plating .

#### SALIENT FEATURES :

- Tech Bright AZ 2014 additives and brighteners have unsurpassed solution, stability and no oil-out problems even at higher temperatures.
- The process produces brilliant level ductile zinc deposits which accepts subsequent post chromate passivations readily evenness.
- Higher current densities can be used in barrel plating, less tendency to burn or white spots.
- Readily plate's substrates such as malleable iron, castings, heat treated and carbo-nitrided steels.
- Simplified iron control of operating solution.

#### BATH MAKE-UP :

	<b>RACK</b>	<b>BARREL</b>	<b>RANGE</b>
Tech Bright AZ 2010 A	125 ml/lit	100 ml/lit	80-150 ml/lit
Tech Bright AZ 2014 B SALT	250 gm/l	225 gm/l	200-280 gm/l
Tech Bright AZ 2014 M	40 ml/lit	35 ml/lit	30-50 ml/lit
Tech Bright AZ 2014 R	0.8 ml/lit	0.4 ml/lit	0.4-1.0 ml/lit

### BATH OPERATING CONDITIONS :

Cathode Current Density	0.5-5 A/dm <sup>2</sup> . ( Vat & Barrel )
Voltage	6-12 ( Barrel ) 2-6 ( Vat )
pH ( electrometric )	4.8-5.2
Filtration	2-3 turnover / hour
Agitation	Air or mechanical.
Anodes	Pure Zinc 99.99% Special High Grade.
Temperature	20-45°C

### CHEMICAL COMPOSITION :

	VAT & BARREL
Zinc metal	25-42 gm/ltr
Total chloride	120-150 gm/ltr
Boric acid	20-30 gm/ltr

### FUNCTION OF SOLUTION COMPENENTS :

#### ZINC METAL :

The recommended range should be maintained in order to get desired optimum results. Weekly analysis if zinc metal concentrations should be made and the necessary daily additions to be done based on this analysis. Metal content can be increased by the addition of Tech Bright AZ 2010 A liquid.

#### TOTAL CHLORIDE :

The chloride content increases by adding Tech Bright AZ 2010 A & Tech Bright AZ 2014 B Salt. Routine analysis and daily additions are necessary to maintain the total chloride within the recommended range.

### **TECH BRIGHT AZ 2014 M (make-up):**

Tech Bright AZ 2014 M is normally consumed by drag out, the addition should be made based upon the Hull-Cell test. Higher concentration of Tech Bright AZ 2014 M may reduce the overall brightness and thus increase the consumption of Tech Bright AZ 2014 R to get the desired results.

### **TECH BRIGHT AZ 2014 R:**

This is mainly responsible for getting the overall brightness and this gives the desired results in combination with Tech Bright AZ 2014 M. Addition of brightener is normally controlled by the Hull-Cell test. The bath can be maintained by adding regularly 150-300 ml of Tech Bright AZ 2014 R and 100-200 ml of Tech Bright AZ 2014 M.

### **COOLING :**

Cooling coils of titanium or Teflon are recommended. Making the titanium coil slightly anodic is recommended, to avoid under the influence of cathodic current.

### **SOLUTION MAKE-UP :**

To make-up the 100 liters of operating solution using Tech Bright AZ 2014 process chemicals, proceed as follows :

- Add 50 liters of warm water to the 100 liter tank.
- Add 22.5 kg of Tech Bright AZ 2014 with stirring, continue the stirring still the salts are completely dissolved.
- Add 100 liters of Tech Bright AZ 2010 A liquid.
- Check the pH of the solution and adjust if necessary to 4.8-5.0 with CP grade hydrochloric acid to lower the pH or potassium hydroxide to raise the pH.
- Add 3-4 liters of Tech Bright AZ 2014 M and 80 ml of Tech Bright AZ 2014 R with stirring.
- Add sufficient water to bring the solution to final operating level.
- Now plate is ready for production use.

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