



ZINCOVATE BLUE SSP

ULTRA HIGH SALT SPRAY TRIVALENT BLUE (CLEAR) PASSIVATE

INTRODUCTION

Zincovate Blue SSP is a unique trivalent passivating conversion coating for electroplated zinc. It will impart a pleasing bright blue conversion coating which, when applied properly, will produce a finish that exceeds 144 hours in rack and more than 96 hours in barrel of neutral salt spray to white corrosion.

BENEFITS

- Bright blue finish
- Provides excellent corrosion protection (144 hrs/rack; 96 hrs/barrel)
- Easy to control
- Does not contain hexavalent chromium

SOLUTION MAKE-UP

Zincovate Blue SSP 5 – 10% v/v

OPERATING DATA

Blue SSP Concentration	5 – 8% v/v (Optimum 7% v/v) 8 – 10% for maximum corrosion protection
Zinc	<15 g/L
Iron	<100 ppm
pH	1.0 – 3.0 (Optimum acid zinc 1.8 – 2.4, alkaline zinc 2.4 – 2.8)
Temperature	65 – 95°F
Immersion Time	20 – 50 seconds
Agitation	Work movement/air

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EQUIPMENT

Tanks	Polypropylene or polyethylene
Heaters	PTFE coated
Ventilation	Recommended

INSTALLATION

It is essential that the tanks to be used for Zincovate Blue SSP are thoroughly cleaned and leached before any product is introduced.

If there is any doubt as to the cleaning procedure please contact Automated Chemical Solutions.

1. Half fill tank with clean water.
2. Add required quantity of Zincovate Blue SSP.
3. Top up to working level and mix well.
4. Heat to operating temperature.
5. Adjust pH.

PROCESS SEQUENCE

1. Zinc plate
2. Cold water rinse
3. Cold water rinse
4. 0.5% v/v nitric acid
5. Rinse
6. Zincovate Blue SSP
7. Cold water rinse
8. Hot water rinse
6. Dry

NOTES:

1. A nitric acid pre-dip is recommended to increase the life of the passivate particularly when an alkaline zinc is used.
2. Although the pH of a new solution make-up may be below the recommended operating range, parts may be processed as this will rise within a few hours.

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MAINTENANCE AND CONTROL

Addition rates can be based on the following:

1 – 2 L Blue SSP / 1000 ft² depending on drag out

pH should be raised with sodium hydroxide solution (100 g/L) or lowered with dilute nitric acid (1% v/v).

NOTES

Zinc thickness: To obtain maximum corrosion resistance with Blue SSP, it is recommended that the zinc be plated to a minimum thickness of 0.3 mils.

**Maximum color/
corrosion protection:** To obtain brightest blue hue and maximum corrosion protection, operate bath at 8-10%, pH (papers) at 1.8 – 2.4 (acid zinc) or 2.4 – 2.8 (alkaline zinc), elevated temperature (85°F) and dwell of 30-45 secs

Reduced bath life: Any components that fall into the passivate solution should be removed immediately. If components are left in solution the bath life will be greatly reduced.

ANALYSIS METHOD

1. Zincovate Blue SSP Titration Method

Reagents

20% w/v sodium hydroxide solution
Hydrogen peroxide solution
Conc hydrochloric acid
Ammonium bifluoride
Potassium iodide
0.1N Sodium thiosulfate
Starch indicator

Method

1. Pipette a 10 ml sample into a 500 ml conical flask.
2. Add 100 mls of DI water and 10 mls of 20% sodium hydroxide solution.
3. Slowly add 20 ml hydrogen peroxide.
4. Boil for 30 minutes and allow to cool.
5. Add 10 ml hydrochloric acid and 3 g ammonium bifluoride.
7. Add 2g potassium iodide.
8. Titrate with 0.1N sodium thiosulfate to a pale straw color. Add starch indicator and continue titration to a green end point.

Calculation

Zincovate Blue SSP (%) = mls of 0.1N sodium thiosulfate X 0.32

Replenishment

For every 1% required add 10 ml/L Zincovate Blue SSP

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ANALYSIS METHOD (con't)

2. Zincovate Blue SSP Photometry Method

Calibration. This should be determined quarterly.

1. Label four 100 ml volumetric flasks as 4, 6, 8 and 10% respectively.
2. Pipette 4, 6, 8, and 10 ml Zincopass Blue SSP to the relevant flask.
3. Make up to the mark with water and mix well.
4. Set the wave length to 600nm
5. Measure the absorbance of each standard.
6. Plot a graph of concentration vs absorbance.

Measurement.

7. Filter a sample of the bath in to the cuvette.
8. Measure absorbance.
9. Determine the concentration from the calibration graph.

STORAGE

Store in original containers above 40°F

SAFETY

CAUTION! Zincovate Blue SSP concentrates and working solutions contain acidic components. Avoid contact with eyes, skin and clothing. Wear chemical handler's gloves, goggles and protective clothing when handling. Read and understand Material Safety Data Sheet before using this product.

PRODUCT GROUPS

The following products are referred to in this data sheet.

PRODUCT NAME	PRODUCT NUMBER
Zincovate Blue SSP	237013

NOTICE

The information and recommendations of PMD (UK), Ltd. and Automated Chemical Solutions, Inc., and its representatives, regarding this product are, to the best of our knowledge, true and accurate. We make no guarantee of results because the conditions of actual use are beyond our control. We assume no liability for damages or penalties resulting from the use of this product or following our recommendations. Our recommendations and suggestions for use of this product are not intended to grant license to operate under or infringe any patent.

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