



# PRODUCT INFORMATION

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**CHEMTREC 800-424-9300**

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## MARTRON ZNBL 5090 YD

High Corrosion Trivalent Yellow Passivate for Electroplated Zinc

### Section 1: PRODUCT DESCRIPTION and FEATURES

**Martron ZNBL 5090 YD** is a unique yellow dye used with **Martron ZNBL 5090**, which is an all trivalent passivating conversion coating for electroplated zinc.

**Martron ZNBL 5090 YD**, when applied properly, will produce a finish that exceeds 144 hours of neutral salt spray to white corrosion.

- Chromate coating is trivalent relying on a stable dye for color
- Typical neutral salt spray resistance for rack processed components more than 120 hours to WCP
- Produces a bright, rich yellow color without hexavalent chrome processes
- Periodic additions of product with infrequent dumping
- Maximum corrosion protection offered by this class of product
- Can be used on a wide variety of zinc plated electrolytes

### Section 2: SAFETY PRECAUTIONS

Always read and understand the Safety Data Sheet (SDS) for any chemical product prior to using the product to ensure familiarity with the methods of safe handling and health hazards associated with **Martron ZNBL 5090 YD**.

### Section 3: MAKE UP and MAINTENANCE OF MARTRON ZNBL 5090 YD

#### Equipment:

Tanks and any ancillary equipment should be constructed of polypropylene, PVC, 316 stainless steel or lined steel.

Solution agitation is recommended for this process. Use clean, oil free air supplied from PVC air lines.

Use stainless steel or titanium steam coils to heat the chromate solution. Ensure adequate ventilation is provided.

#### Solution Make Up:

|                             | Optimum  | Range        |
|-----------------------------|----------|--------------|
| <b>Martron ZNBL 5090 YD</b> | 3% (vol) | 2 – 4% (vol) |

#### Make Up Procedures:

- Fill tank to 75% of its working volume with warm water (80°F)
- With continuous stirring, add the required amount of **Martron ZNBL 5090**
- Make necessary adjustments to process chemistry for pH
- With continuous stirring, add the required amount of **Martron ZNBL 5090 YD**

- Add balance of water to fill tank
- Stir to mix uniformly
- Heat chromate solution to operating temperature
- Confirm solution composition by analysis

#### Operating Conditions:

|                | Optimum | Range        |
|----------------|---------|--------------|
| Temperature    | 110°F   | 104 - 125°F  |
| Immersion Time | 30 sec. | 20 – 45 sec. |
| pH             | 2.0     | 1.8 – 2.2    |

#### Typical Cycle:

- Apply 2 - 3 tenths of zinc
- Overflowing water rinse
- Nitric Acid dip (0.25 – 1.0% vol; pH <1.5)
- Overflowing water rinse
- Apply conversion coating **Martron ZNBL 5090** with **Martron ZNBL 5090 YD**
- Overflowing water rinse
- Rinse in hot running water (not to exceed 160 °F)

#### Process Control:

Solution maintenance is a function of drag out and soil contamination, and varies by application. Solution concentration is determined by wet chemical analysis.

#### pH:

The control of pH is very important. The pH of the solution should be controlled with a pH meter. The use of papers tends to give inaccurate results.

The pH will tend to rise with use. Lower the pH with **Martron ZNBL 5090**. If the pH is not effectively reduced by additions of product, the bath is spent and should be dumped.

#### Analytical Method:

#### Equipment Required:

- 10.0 ml pipet
- 250 ml Erlenmeyer flask
- Hot plate
- Glass beads or boiling stones
- Graduated cylinder
- 25 or 50 ml buret with stand

#### Reagents Required:

- 50% Sodium Hydroxide Solution
- 30 to 35% Hydrogen Peroxide
- Conc. Hydrochloric Acid, reagent grade
- 10% Potassium Iodide Solution
- Starch Indicator Solution
- 0.1 N Sodium Thiosulfate Solution

#### Procedure:

- Pipet a 10.0 ml sample of the chromate solution into a 250 ml Erlenmeyer flask.
- Add approximately 25 ml of distilled or deionized water.
- Using a pH meter, adjust pH to 11.0 with 50% Sodium Hydroxide solution.
- Add several glass beads or boiling stones, and heat to boiling on a hot plate.
- **SLOWLY** add 2.0 ml of 30 to 35% Hydrogen Peroxide to form a yellow color.

- Boil for approximately 20 to 30 minutes.
- Remove the sample from the hot plate, and low the sample to cool to room temperature, and dilute to 100 ml with deionized water.
- Add 5 ml of concentrated Hydrochloric Acid.
- Add 10 ml of 10% Potassium Iodide solution.
- Add 5 ml of Starch Indicator solution.
- Titrate with 0.1 N Sodium Thiosulfate solution until a clear endpoint can be held for 60 seconds.
- Calculation:  
(% vol) **Martron ZNBL 5090 YD** = ml of 0.1 N Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> x 1.0

#### **Section 4: WASTE TREATMENT**

Consult appropriate Federal, State, and local regulatory agencies to ascertain proper disposal procedures. Do not discharge into waterways or sewer systems. Disposal will depend on the nature of waste material.

#### **Section 5: STORAGE**

Avoid freezing **Martron ZNBL5090 YD**. Store the **Martron ZNBL 5090 YD** in an appropriate area with compatible materials. All chemicals should be stored in compliance with all applicable federal, state or local requirements.

#### **Section 6: NON-WARRANTY and DISCLAIMER**

The data contained in this bulletin is believed by **Martron Inc.** to be true, accurate and complete. Since the final methods of use of this product are in the hands of the customer, and beyond **Martron Inc.'s** control, **Martron Inc.** cannot guarantee that the customer will obtain any specific result. Accordingly, **Martron Inc.** does not assume any responsibility for the use of this product by the customer, the results obtained, nor the infringement of any patents of third parties.