



PRODIGY TRITON

Hex-free Passivate For Zinc

TRITON is an improved specially formulated one-component liquid trivalent passivate coating for cyanide, alkaline non-cyanide, chloride, zinc/iron and zinc/cobalt electrodeposited zinc surfaces. It brightens and passivates most zinc surfaces leaving a pronounced blue hue. Its unique properties make it receptive to a variety of post-treatments.

TRITON has an enhanced blue-bright appearance and corrosion protection. When applied properly, may exceed 120-150 hours of neutral salt spray to white corrosion products (in rack application.) However since the degree of protection is very dependent upon the surface of the base metal plated, results will vary from installation to installation.

TRITON has a high chemical tolerance to iron and other metallic contamination, while producing a deposit that is compliant with ELV (automotive), RoHS (electronics) and WEEE (electronics).

OPERATING PARAMETERS:

	RANGE	OPTIMUM	AUTOMOTIVE
TRITON	4.0 – 10.0%/ vol	8.0%/ vol	8.0 – 10.0 %/ vol
Immersion Time	5 – 60 sec	30 – 45 sec	45 – 60 sec
pH	1.6 – 3.5	2.0 – 2.4	2.0 – 2.4
Bath Temperature	70 – 110 °F	85 °F	80 - 90 °F

SOLUTION MAKE UP:

1. Be sure tank used is leached of all hexavalent chromium before charging.
2. Fill tank to approximately 75% of final volume (preferably with de-ionized water).
3. Add the required amount of **PRODIGY TRITON**.
4. Bring tank to final working volume and check pH of the solution.

To raise the pH use dilute Sodium Hydroxide, and to lower the pH use Nitric Acid.

TYPICAL CYCLE

1. PLATE
2. RINSE
3. NITRIC ACID PREDIP (0.5-1.0% BY VOLUME)
4. RINSE
5. **PRODIGY TRITON**
6. COLD WATER RINSE
7. HOT WATER RINSE
8. **PRODIGY RECOMMENDED POST-DIP (OPTIONAL)**
9. DRY



ANALYSIS METHOD

1. Pipette a 20 ml sample of the operating solution into a 250 ml Erlenmeyer flask and add approximately 100 mls of DI water.
2. Adjust pH of the solution with dilute caustic soda to a pH of 10.0-11.0
3. Add 2 mls of 35% Hydrogen Peroxide
4. Boil solution for approximately 15-30 minutes so all peroxide is dissipated.
5. Cool solution to Room Temperature and add 25-50 mls of DI water.
6. Add 10 mls of 50 % HCl
7. Add 10 mls of 10% Potassium Iodide solution
8. Titrate brown solution to straw yellow color with 0.1N Sodium Thiosulfate.
9. Add 1-2 mls of fresh 1% starch solution and continue titrating with the Thiosulfate until the blue-black color disappears back to the inherent pale blue-green

Calculation:

Mls 0.1 N Sodium Thiosulfate solution X 0.33 = % by/vol **PRODIGY TRITON**

OPERATING NOTES

- * A Nitric Acid predip is recommended to increase the life of the passivation, particularly when an alkaline zinc electrolyte is utilized.
- * For a clear or "blue-bright" finish (i.e. without the **PRODIGY SUNRISE YL1** added) a thinner passivate film is preferable to prevent iridescence etc. Subsequently, a lower concentration, temperature and immersion time range is recommended. Although please note that a thinner conversion film may negatively impact the ultimate corrosion resistance of the coating.
- * However, when utilizing **PRODIGY SUNRISE YL1**, a thicker, more porous conversion film is preferable to a thinner film to thus accept more dye during processing. This is naturally more conducive to a deeper, richer orange-yellow color. Therefore, for optimum corrosion resistance and dye acceptability, the **PRODIGY TRITON** should be applied towards the higher end of the concentration, temperature (and preferably immersion time) range.

SAFETY INFORMATION

Additives may cause skin irritation. Use chemical goggles and rubber gloves when handling. Always read the Material Safety Data Sheet for any chemical product to ensure familiarity with the methods of safe handling and the health hazards associated with the product.

STORAGE

PRODIGY TRITON proprietary additives can freeze if exposed to below freezing temperatures for prolonged periods of time. Store at temperatures above freezing. **If freezing should occur, the container should be warmed and mixed thoroughly before using.**

WASTE DISPOSAL

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. Dispose of waste material & empty containers according to Local, State, Federal, and Provincial Environmental Regulations. Consult MSDS for additional safety and waste treatment information.

NON-WARRANTY

The data contained in this bulletin is believed by Haviland Products Company to be true, accurate and complete. However, since final methods of use for this product are in the hands of the customer and beyond our control, we cannot guarantee that the customer will obtain the results described in this bulletin. Haviland Products Company cannot assume any responsibility for the use of this product by the customer in any process, that may infringe the patents of third parties.

