

Accu-LABS INC.

4831 S. Whipple Avenue
Chicago IL 60632
Phone: 773.523.3100 Fax: 773.523.4008
www.accu-labs.com

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516

TRIVALENT YELLOW FOR ZINC DIECAST

Accu-Labs 516 is a new trivalent yellow passivate for zinc diecast. **Accu-Labs 516** is a unique formulation that produces a uniform, heavy and adherent yellow passivate film on zinc diecastings.

FEATURES:

- **Easy to use in rack, basket and barrel processes**
- **Excellent wet film strength, dries to a tenacious protective film**
- **High corrosion resistance; meets military and automotive specifications**
- **Superior base for paints, lacquers, and adhesives**
- **Wide operating range and long solution life**
- **Corrosion protection up to 72-144 hours to white rust (ASTM B-117)**
- **Additional corrosion protection can be added by using KSN Sealer**

SOLUTION MAKE-UP:

Accu-Labs 516-MU: 10% by volume (**516-MU is used for makeup only**)
Accu-Labs 516-Y: 1 % by volume typical (**for makeup and replenishment**)

Procedure

- Fill a suitable, properly prepared tank about 80% full with water
- Add the required amount of **Accu-Labs 516-MU** and mix thoroughly
- Add the required amount of **Accu-Labs 515-Y** and mix thoroughly
- Bring the solution level to its final volume with water & mix thoroughly
- Bring solution to operating temperature (80-100°F) prior to use

OPERATING GUIDELINES:

Temperature:	80-100°F (90°F optimum)
pH:	2.4-3.0 (2.70 optimum)
Dwell Time:	30-90 seconds (60 seconds typical)
Agitation:	Mechanical or air

PROCESS SEQUENCE

- 1.) Soak Clean if required; **Accu-Labs 128** Soak/Electrocleaner
- 2.) Water Rinse
- 3.) Acid Activate **Accu-Labs 205-JP** 2-6 OPG, Ambient Temperature
- 4.) Water Rinse
- 5.) Immerse in **Accu-Labs 516** Trivalent Yellow
- 6.) Water Rinse
- 7.) Immerse in **Accu-Labs KSN** Sealer (Optional)
- 8.) Hot Air Dry Preferred

SOLUTION MAINTENANCE

Accu-Labs 516-MU is used **only** for initial bath makeup. The working solution is maintained by proportional additions of the replenisher **Accu-Labs 516-R** and the colorant **Accu-Labs 516-Y**.

Maintain the solution by monitoring pH and making 0.25-0.50% additions of **516-R** to lower the pH to the working range as needed. For every 1 gallon (3.8 liters) of **516-R** added an additional 8-16 fluid ounces (240-475 ml) of **516-Y** should be added to maintain colorant concentration. The solution can be maintained by automated pH monitoring and replenishment if desired.

The solution operates over a wide concentration range. If pH and temperature are maintained within established parameters the process times and coating results will be consistent.

516-R Control Analysis:

- Pipette 10 ml 516 working bath sample into an e-flask
- Add 75-100 ml DI water
- Add 1 gram sodium hydroxide & dissolve or 25 ml 1N sodium hydroxide
- Add 0.5 ml (~10 drops) 35% hydrogen peroxide, swirl to achieve yellow tint
- Boil 45 minutes to about 10 ml
- Add 50 ml DI water & 1 ml 10% nickel chloride or nickel sulfate solution
- Boil again for 15 minutes
- Cool solution; add 50 ml DI water, 1-2 grams ammonium bifluoride, 30 ml 6N HCl and 10 ml of potassium iodide 10%.

- Titrate the solution with 0.1N sodium thiosulfate solution. When solution becomes a light straw color add 2-4 mls of starch indicator solution.
- Resume titrating until dark blue color just completely disappears.
- Mls of thiosulfate x 0.057 = grams/liter of Cr (111)

NOTE: The solution should be maintained within a working range of 0.8-1.8 grams/liter of Cr (111). Adding 1% by volume of **Accu-Labs 516-R** will increase the Cr (111) concentration by 0.2 grams/liter. If the Cr (111) concentration is within the working range, the solution pH may be maintained with *minor* additions of *dilute* sulfuric acid.

EQUIPMENT:

Process tanks may be constructed of polypropylene, PVC, Koroseal lined steel or fiberglass. Heating/cooling coils may be made of stainless steel, titanium, Teflon or quartz.

SAFETY

Accu-Labs 516 solutions are acidic and contain trivalent chromium. Avoid contact with skin and eyes and wear protective gear. Read the Material Safety Data Sheet for all chemical products before use.

WASTE DISPOSAL

Dispose of spent material in accordance with all applicable federal, state, and local regulations and permits. Consult the MSDS for additional regulatory information.

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