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COLDIP NI-Z SAPPHIRE 400

Blue Passivate for Zinc-Nickel Alloy
TECHNICAL DATA
5-8-17

COLDIP NI-Z SAPPHIRE 400
A HIGH CORROSION RESISTANT "TRIVALENT BLUE-BRIGHT" CONVERSION COATING FOR ZINC NICKEL

COLDIP NI-Z SAPPHIRE 400 is a unique all Trivalent passivating conversion coating for electroplated zinc/nickel alloy.

COLDIP NI-Z SAPPHIRE 400 will impart an aesthetically pleasing blue-bright conversion coating which when applied properly will produce a finish that exceeds 400 hours of neutral salt spray to white corrosion products.

COLDIP NI-Z SAPPHIRE 400 is a cost-effective alternative to high corrosion finishes in an all "trivalent" containing product.

COLDIP NI-Z SAPPHIRE 400 when top coated with Zinc-Chro-SHIELD will provide 500 hours to white corrosion products.

OPERATING INSTRUCTIONS

SOLUTION MAKE-UP:

CONCENTRATION:	RANGE	OPTIMUM
COLDIP NI-Z SAPPHIRE 400A	2-4% by volume	3.75% by volume
COLDIP NI-Z SAPPHIRE 400B	7 to 8% by volume	7.8% by volume
DIP TIME:	30 to 75 seconds	45 seconds
TEMPERATURE:	70-90° F (21° - 32° C)	80° F (27° C)
pH:	4.0 to 4.4	4.2

NOTE: Shorter immersion times will generally require higher concentrations of the COLDIP NI-Z SAPPHIRE 400A

MAINTENANCE ADDITIONS

Additive COLDIP NI-Z SAPPHIRE 400A (Cr): 40 mL per 100 square feet
Additive COLDIP NI-Z SAPPHIRE 400B (Co): 20 mL per 100 square feet
Hydrochloric Acid: approximately 2.5 mL per 100 square feet

Periodic titrations should be made to ensure correct concentration.

ANALYTICAL PROCEDURE

1. Pipette a 10 ml chromate sample into a 100 ml volumetric flask. Dilute to 100 ml with distilled water and mix well.
2. Pipette 10 ml of the above diluted solution into a 250 ml Erlenmeyer flask and dilute to 100 ml with distilled water.
3. Add 5 ml 20% Sodium Hydroxide and 1 ml 35% Hydrogen Peroxide.
4. Boil solution approximately 5 minutes.
5. Slowly add 1 ml 10% Nickel Chloride Solution and continue boiling for an additional 2 minutes.
6. Cool solution to room temperature.
7. With mixing, add 10 ml Concentrated Hydrochloric Acid, 1 g Ammonium Bifluoride, 10 ml 10% Potassium Iodide and 2 ml Starch Indicator Solution.
8. Titrate with Standard 0.010 N Sodium Thiosulfate from a blue to clear-green endpoint.

FACTOR: ml 0.010 N Sodium Thiosulfate x 0.2 = % COLDIP NI-Z SAPPHIRE 400A

TYPICAL CYCLE:

- PLATE
- RINSE
- RINSE
- COLDIP NI-Z SAPPHIRE 400
- COLD WATER RINSE
- HOT WATER RINSE
- DRY

HELPFUL HINTS

1. It is best to allow 30 min equalization time after making up a new passivate solution.
2. A hang time after removing the parts from the passivate for 20 seconds allows a more uniform blue color.
3. Continuous filtration of the working solution is strongly recommended. A slight precipitate may form in the solution during operation which is normal but should be removed for best results.

HANDLING AND STORAGE

CAUTION: COLDIP NI-Z SAPPHIRE 400 is corrosive and contains chromium compounds and strong mineral acids. Contact with the skin or eyes should be carefully avoided. Protective clothing and eye shields or goggles should be worn when handling COLDIP NI-Z SAPPHIRE 400.

In case of contact, flush with large amounts of water. Remove contaminated clothing. For more detailed handling and storage instructions, please refer to the MSDS.

FREEZABILITY: As with most chemical products, it is preferable that freezing be avoided. However, if freezing should occur during transportation or storage, directions for handling the products covered in this technical data sheet are as follows:

If COLDIP NI-Z SAPPHIRE 400 freezes, warm to 95-105F / 35-41C in a warm water bath. Thoroughly mix until precipitates are completely dissolved.

NON-WARRANTY

The data contained in this bulletin is believed by Columbia Chemical Corp. to be accurate, true, and complete. Since, however, final methods of use of 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, nor can we assume responsibility of the use of this product by the customer in any process which may infringe the patents of third parties.