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COLDIP TRI-V 120

LIQUID CHROMATE
TECHNICAL DATA
12-06-11

COLDIP TRI-V 120

A HIGH CORROSION RESISTANT "TRIVALENT BLUE-BRIGHT" CONVERSION COATING FOR ZINC

COLDIP TRI-V 120	is a unique all "trivalent" conversion coating for electroplated zinc.
COLDIP TRI-V 120	will impart an aesthetically pleasing blue-bright conversion coating which when applied properly will produce a finish that exceeds 120 hours of neutral salt spray to white corrosion products.
COLDIP TRI-V 120	is a cost effective alternative to high corrosion finishes in an all "trivalent" containing products.
COLDIP TRI-V 120	is an easy to use one part system that is applied by conventional immersion techniques.
COLDIP TRI-V 120	is approved by General Motors Worldwide under the GMW 3044 specification.
COLDIP TRI-V 120	is approved by Delphi Corporation under Delphi DX 551200 specification.
COLDIP TRI-V 120	when top coated with Zinc-Chro-SHIELD or Zinc-Chro-PELLENT will provide 350+ hours to white corrosion products.

OPERATING INSTRUCTIONS

	GENERAL APPLICATION	GMW 3044 APPLICATION
Concentration:	3% to 8% by volume	6% to 8% (Optimum 7%)
Dip time:	30 to 90 seconds	50 to 70 seconds (Optimum 60 seconds)
Temperature:	80° to 100° F (26° - 38° C)	80° to 100° F
pH:	1.5 to 3.0	1.8 to 2.4 (Optimum 2.0)
Zinc deposit thickness:	Minimum 0.3 Mil (8 Microns)	8 to 16 Microns

NOTE: Dip times can vary depending upon the concentration and the age of the chromate.

MAINTENANCE ADDITIONS

Periodic titrations should be made to ensure correct concentration. If the analysis shows the proper amount of COLDIP TRI-V 120 and the pH is high, small additions of 50% by volume of nitric acid can be made to adjust the pH.

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 0.382 = % COLDIP TRI-V 120

TYPICAL CYCLE:

- PLATE
- RINSE
- ACID PRE-DIP (0.25% to 0.5% BY NITRIC ACID)
- RINSE
- COLDIP TRI-V 120
- COLD WATER RINSE
- HOT WATER RINSE
- DRY

HELPFUL HINTS

1. A Nitric Acid pre-dip is recommended to increase the life of the COLDIP TRI-V 120 solution, particularly when an alkaline zinc electrolyte is utilized.

2. Removing fallen parts from the COLDIP TRI-V 120 tank and the Nitric Acid pre-dip tank is recommended to reduce the build-up and drag-in of iron contamination. In cases where the iron has exceeded the maximum concentration, the use of COLDIP IRON CONTROL can be used to help extend the life of the chromate.

3. Although the pH for a new solution make-up may be below the recommended operating range of 1.5 to 3.0, parts can be processed since the pH will climb after only a few hours.

4. Zinc-Chro-SHIELD or Zinc-Chro-PELLENT can be used in the final hot water rinse to help improve corrosion protection.

5. With trivalent chromate based conversion coatings, care should be taken to avoid excess abrasion of the parts after processing. Trivalent coatings when fractured do not “heal” as in the case of traditional hexavalent products.

6. A cold COLDIP TRI-V 120 solution will affect the corrosion resistance of the chromate film. Maintaining the working temperature at 90° to 100°F, 32° to 38°C, will help improve corrosion protection.

7. Simply by increasing the COLDIP TRI-V 120 working concentration, temperature and dwell time can improve overall consistency of color and corrosion protection.

HANDLING AND STORAGE

CAUTION: COLDIP TRI-V 120 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 TRI-V 120.

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 TRI-V 120 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.