



Puma Chemical • P.O. Box 67 • Marble, N.C. • 28905

Toll-Free: (800) 211-7993
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www.pumachemical.com

C-12 ACTIVATOR

FOR ACTIVATING GOLD, SILVER, CHROME, NICKEL, COPPER, STAINLESS STEEL, TITANIUM AND PAINT APPLICATIONS OVER STEEL, NICKEL, COPPER, CERAMIC, GLASS, PLASTICS, KOVAR™, AND OTHER METAL SURFACES

General Information

C-12 ACTIVATOR - is alkaline based and formulated with special wetting agents. A proprietary product, C-12 ACTIVATOR allows you to plate nickel over nickel, gold over nickel, and chrome over chrome, or chrome skip, and chrome miss, with a perfect bond and 100% adhesion.

C-12 ACTIVATOR - can also be used between copper and nickel, nickel and gold, nickel and chrome, to eliminate passivation or lamination on the above alloys.

C-12 ACTIVATOR - When plating gold over nickel, with the use of C-12 ACTIVATOR, the throwing power increases at the low current density area. The same holds true when activating nickel, chrome, or gold.

C-12 ACTIVATOR - makes stripping a thing of the past. If the first coat is not peeling or burned (nickel or chrome), replating the nickel or chrome, do not strip it. Replating problems are gone, with the use of C-12 ACTIVATOR. When activating chrome over chrome, do not use ACID in C-12 ACTIVATOR solution (bath).

NOTICE: When plating the second coat of chrome over the first, in some cases a slight burn shows at the high current density area. Since C-12 ACTIVATOR makes the current flow faster, the burning may occur at the rechromed plated area. If this occurs then reduce (one) volt. Example: reduce from 5 volts down to 4 volts, at that point the burn is no longer in the plating range.



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CHROME OVER NICKEL **C-12 ACTIVATOR BATH FORMULATION (page 5)**

The Original C-12 Activator enables you to plate chrome over nickel and do away with chrome skip, miss and chrome shadow. You can also plate nickel over nickel with 100% adhesion. The Original C-12 Activator can be installed between nickel and chrome tanks.

CYCLE WITH C-12 ACTIVATOR BATH

- Nickel plate or Chrome plate
- Water rinse
- C-12 Activator Bath by immersion
- Water rinse
- Nickel plate or Chrome plate

THE ABOVE PROCESS INCREASES ACTIVATION, ELIMINATING NICKEL PASSIVATION, THEREFORE PREVENTING NICKEL OR CHROME REJECTS.

NICKEL OVER OLD PLATED NICKEL **CYCLE WITH C-12 ACTIVATOR BATH**

1. Electro clean (reverse current)
 - Cleaner must be free from chromates and organics.
2. Water rinse
3. C-12 Activator Bath with 2 Volts Direct Current.
 - Use tank for anode and the work (parts to activate) as cathode.
4. Water rinse.
5. Nickel plate.

THE ABOVE PROCESS WILL ENABLE YOU TO PLATE NICKEL OVER OLD PLATED NICKEL WITH 100% ADHESION AND A PERFECT BOND.



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COPPER, NICKEL, CHROME, AND SILVER OVER STAINLESS STEEL CYCLE WITH C-12 ACTIVATOR BATH

1. Clean Stainless Steel. Surface must be very clean.
2. C-12 Activator Bath for 30-60 seconds.
 - Use 2 Volts Direct Current, NO heat.
3. Water rinse
4. Chloride strike (Optional)
5. Water rinse
6. C-12 Activator Bath (with or without current)
7. Water rinse

THE ABOVE PROCESS WILL ENABLE YOU TO PLATE COPPER, NICKEL, CHROME, AND SILVER OVER STAINLESS STEEL WITH A PERFECT BOND.

REPLATING OLD NICKEL AND NICKEL OVER NICKEL AFTER CHROME IS STRIPPED OFF

CYCLE WITH C-12 ACTIVATOR BATH

1. Electro clean using reverse current for 30 seconds.
 - Cleaner must be free from chromates and organics.
2. Water rinse
3. Acid dip in a 20% Wood's Nickel Strike for 20 seconds direct current.
4. Water rinse
5. C-12 Activator Bath with 2 Volts Direct Current for 20 seconds.
6. Water rinse
7. Nickel Plate

Steps #3, and #4, can be eliminated with C-12 Activator, with good results.



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C-12 ACTIVATOR

REPLATING NICKEL PLATED REJECTS REJECTS PLATED WITHIN 24 HOURS

1. Activate by immersion only in C-12 Activator Bath.

REJECTS PLATED 24 HOURS OR LONGER

1. Activate using 2 Volts Direct Current in C-12 Activator Bath.
 - Do not use more than 2 Volts.
2. Make tank the anode and the work the cathode.

REPLATING CHROME OVER CHROME OR CHROME SKIP CYCLE WITH C-12 ACTIVATOR BATH

1. Water rinse
2. C-12 Activator Bath (NON ACID FORMULATION).
 - 20-60 seconds dwelling time.
3. Water Rinse
4. Chrome Plating Bath solution

YOU CAN NOW PLATE CHROME OVER CHROME STRIP WITHOUT STRIPPING THE FIRST COAT OF CHROME. YOU CAN DO AWAY WITH CHROME REJECTS BY INSTALLING C-12 ACTIVATOR BETWEEN NICKEL AND CHROME BATHS.

PLATING ANY METAL OVER THE SAME METAL PLATED WITHIN 24 HOURS

1. Activate by immersion only in C-12 Activator Bath

PLATED 24 HOURS OR LONGER

1. Activate using 2 Volts Direct Current in C-12 Activator Bath.
 - DO NOT use more than 2 Volts.
2. Make tank the anode and the work the cathode.



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GOLD, SILVER, PALLADIUM, AND CHROME OVER MOST METALS, GLASS, CERAMICS, PLASTICS OR KOVAR™ WHEN PLATING THESE MATERIALS, MAKE UP C-12 ACTIVATOR BATH WITHOUT USING ACID.

CYCLE WITH C-12 ACTIVATOR BATH

1. Water rinse
2. C-12 Activator Bath. 20-60 seconds dwelling time.
 - With/without 2 Volts Direct Current.
3. Water Rinse
4. Plating Bath solution

The Original C-12 ACTIVATOR BATH FORMULATIONS

40 GAL. BATH EXAMPLE USED (part#80663)

ACID FORMULATION

1. 38 gallons water
2. 1 gallon The Original C-12 Activator
3. pH of 1.4 (98%grade) HCL or Sulfuric Acid
4. 2 Volts Direct Current or by immersion.
5. Room temperature or heat up to 110°f
6. 20-60 seconds dwelling time
7. Use tank for anode, work for cathode.
8. Keep pH. 1.5 (acid formula)(pH. 8.0 for non-acid)

NON-ACID FORMULATION

1. 39 gallons water
2. 1 gallon The Original C-12 Activator
3. NO ACID
4. 2 Volts Direct Current or by immersion.

BATH CONTROL

Use Hydrometer, reading from 0 to 10, Baume control at 1.0. When Bath is first made up Baume is @1.0, pH is @1.5 for acid formulation.

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