

ABCO Nickel Stripper # 99

[ABCO Products of Sacramento](#)

Primary Usage

When mixed in accordance with simple directions and operated at the recommended temperature, a new solution of ABCO STRIPPER 99 should strip electrolytic nickel at the rate of one to two mils per hour and, should dissolve 2 ½-6 ounces of nickel per gallon of solution.

The stripping rate of electroless nickel depends on the phosphorous content of the plate. A phosphorous content not exceeding 11% should dissolve at the same approximate rate as electrolytic nickel plate.

Chemical nickel strippers remove the most nickel per gallon of solution when they are correctly maintained. A stripping bath that is used lightly and kept hot over a prolonged time period will strip less nickel than an identical bath, which is used quickly. To prolong bath life, allow ABCO Stripper 99 to cool to room temperature when not in use.

A one-component nickel stripper, ABCO Stripper 99 offers ease of operation, an absence of fumes and unpleasant odors, almost complete elimination of operator hazards, and simplified waste disposal of the spent bath. Your supplier stands ready at all times to assist you with technical advice to aid ABCO Stripper 99 to your needs in your facilities.

Application

There are two methods of usage of ABCO Stripper 99: The BATCH METHOD and the ADDITION METHOD. Those operators who wish to make up smaller baths as needed and use them to completion often use the batch method. Usually removing 2 ½- 4 ounces of nickel per gallon of solution. Those operators using larger tanks who need to achieve greater life and nickel concentrations may use the addition method.

Batch Method

1. Fill the stripping tank half full of 120- 150 F water.
2. Add two and one-half pounds of nickel stripper for each gallon of working capacity.
3. Complete filling the tank with warm water and stir while heating to the operating temperature of 120-150 F.
4. Check the pH of the bath. It should be 9.2- 9-8. If lower, raise the pH by slowly stirring in soda ash, checking frequently until desired pH is obtained.
5. When the proper pH has been obtained, the proper temperature reached, and the powder dissolved, your stripping bath is ready.
6. After completion of each stripping operation, analyze your bath for nickel content using the standard murexide indicator procedure. (See page five for your convenience,). After completing your titration procedure, you may bring your bath back to the original operating condition by ADDING .60 POUNDS OF NICKEL STRPPER PER GALLON OF TANK VOLUME PER OUNCE OF NICKEL IN THE SOLUTION.
7. After stirring in the addition, cool tank until next usage. DO NOT COVER.
- 8.

8255 Alpine Ave, Ste A, Sacramento, CA 95826 Ph: (916) 447-9931 Fax (916) 443-7466

Bath Operation Procedures

After removing all chromium, immerse parts in the nickel stripper solution. Racked parts should be suspended in solution, not touching the bottom or sides of the tank or heating coils. Parts should be slightly spaced to allow circulation of stripper solution and avoid point-contact problems. For the most economical operation, it is recommended that the operator strip as many parts as can possibly be put in the tank at one time, filling it to its part-holding capacity. Parts can be successfully stripped in a rotating barrel and, in most cases; the smut will be removed by the tumbling action during the stripping cycle. Good success has also been achieved with an enclosed stripping system, putting hot water, ABCO Stripper 99 (in the correct quantity) and parts in an enclosed barrel and slowly tumbling.

Post Treatment

The black smut remaining on stripped parts is a combination of nickel oxides and nickel sulfates and can be removed by any one of the following methods:

1. If hexavalent chromium (App. 1 lb./gal) or cyanide (app. 4 oz./ gal) is in house, a post dip in either will remove the nickel smut.
2. To remove smut from steel parts, the use of reverse current at six or more volts while the part is in the strip tank is effective, but may shorten the bath life.
3. A separate bath made up of 50% spent strip and 50% new strip (made up at only 1 lb./gal) with reverse current at six or more volts is being widely used.
4. For removal of smut from steel, copper, or zinc diecast, the following formulation will quickly remove all smut with no etching of the zinc or copper:

(A) N.T.A. Trisodium Salt: ½ lb./gal

(Nitritotriacetic Acid – Available from W.R. Grace or Dupont)

(B) 35% Hydrogen Peroxide: 5-10% by volume

Because of the short life of hydrogen peroxide, this dip must be made up on a daily basis. When working with steel (ONLY) substrates, the user may substitute ½-1lb./gal. UREA for the N.T.A. to avoid chelating problems.

5. If stripping a thin electrolytic nickel (.2-.4 mils) the smut will also be thin and can usually be removed during the normal cleaning cycle prior to replating. Electroclean, rinse, and acid dip. If residual smut is detected after acid, repeat the process.

8255 Alpine Ave, Ste A, Sacramento, CA 95826 Ph: (916) 447-9931 Fax (916) 443-7466

Removing Electroless Nickel from Steel

With ABCO Stripper 99

ABCO Stripper 99 gives superior results when for removal of electroless nickel coatings. When stripping electroless nickel coatings containing no more than 11% phosphorous, follow “ Mixing Instructions “, Bath Operation, and Post Treatment procedures mentioned previously.

When stripping bright electroless nickel in a new bath up to half-life, the smut will be dissolved if the parts are allowed to remain in the bath for 1-2 hours after the stripping is completed. The stripper solution should not affect the base metal. This process, however, is not as effective after the bath passes half-life.

It has also been verified that heating the electroless nickel plated part prior to stripping often speeds the process of removal of electroless nickel plate. Heating the part to 450F for one hour with immediate immersion in the stripping bath will shorten the required stripping time.

Disposal

ABCO Stripper 99 users are currently employing the following methods:

1. In consultation with licensed waste disposal companies, we have been advised that, because of the non-toxic formulation of the ABCO Stripper 99, the spent solution, after having been fixed in a solid base by the disposal company, may be deposited in an Industrial rather than a Hazardous Landfill. This disposal classification results in charges as small as .50/gallon or less and is, in many cases, more economical than treating within your facilities. The operator should take care that he does not deposit chromium into his stripping bath; thereby causing the solution to be classed as hazardous waste.
2. The addition of ABCO GOTCHA (Sodiumdimethyldithiocarbamate) results in an immediate precipitation of the nickel in your spent ABCO Stripper 99 solutions creating a sludge which can then be treated by being slowly fed (after reviewed by your waste disposal consultants) through your waste treatment system. The above named chemical can be obtained from ABCO Products.
3. Plating out the nickel from spent stripping bath is also being successfully employed. Again, the residual liquid is slowly fed through your waste treatment system. Some operators may want to employ this plate-out treatment along with a chemical treatment.

Chemical Composition

Sodium Carbonate

[8290 Alpine Avenue Sacramento, CA. 95826](#) [Ph: \(916\) 447-9931](#) [Fax \(916\) 443-7466](#)

Tanks and Equipment

Tanks: Tanks may be unlined steel, polypropylene, barrels, or any lined tank that will survive operational temperature.

Agitation: Agitation or circulation of ABCO Stripper 99 solution is required to prevent stratification of the bath. Mild air, pumped or stirred solution, mechanical agitation or tumbling are all adequate methods.

Heat: Solution heating is required to maintain a recommended temperature of 120-150F during stripping operation. To prolong bath life, heating should be discontinued but, if used, you must agitate the bath thoroughly to reduce boiling of the bath at the interface of the heater. It is recommended that agitation be directed at, or placed under, the steam coils to quickly move the solution from the heating coils.

Analytical Procedure

To analyze your stripping bath for nickel content:

Reagents Needed: Concentrated Ammonium Hydroxide

Murexide Mix (1 gram of Murexide mixed with 100 grams of CP

Sodium Chloride)

E.D.T.A. (Disodium Dihydrate Salt)

0.1M, 37.2350 grams per liter

Pipette a 10 ml sample into a 250 Erlenmeyer Flask Dilute to 100 ml with D.I. water, Add 10 ml Ammonium Hydroxide, add Murexide Mix on a quantity equal in size to the head of large kitchen match. Titrate with 0.1m E.D.T.A. to a violet-purple end point. Calculation: Number Mls. 0.1M E.D.T.A. Titrated x .078 Factor = oz./gal. Nickel metal. Add .60 lbs. Nickel stripper per gallon of tank volume per ounce of nickel to return stripping bath to original condition.

Example: 100 Gal. Tank: Analysis #1: Nickel analyzed at .50 oz./gal Multiply .60 x 100 gallons x .50oz. nickel = 30 lbs. required addition of ABCO Stripper 99.

Analysis #2: The next day, nickel analyzed at total of 1.25 oz./gal. Subtract the previous day's analysis: 1.25-.50= .75 oz./gal. Nickel

Caution: Avoid breathing dust and wear protective equipment when handling

[8255 Alpine Ave, Ste A, Sacramento, CA 95826](#) [Ph: \(916\) 447-9931](#) [Fax \(916\) 443-7466](#)