



# **STRIPRITE™**

## **STRIPPER NCNS**

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- *Strips at 2 ml/Hour.*
- *Strips electrolytic and electroless nickel.*
- *Low operating costs.*
- *Safely strips nickel off steel.*
- *Contains no hazardous chemicals.*
- *Can be industrial waste landfill disposed.*

### **NON-TOXIC, NON-CYANIDE NICKEL STRIPPER**

**STRIPPER NCNS** is a high performance powdered material, when dissolved in tap water, will chemically remove electrolytic and electroless nickel deposits from steel by simple immersion. For stripping of nickel off brass, copper, and zinc die-cast **STRIPPER NCB** is recommended. It offers ease of operation, no fuming, almost complete elimination of operator hazards and simplifies waste treatment of the bath.

**STRIPPER NCNS**, when operated as directed, will strip electrolytic nickel deposits at the rate of 1-2 mils per hour and dissolve 2.5 to 6 ounces of nickel metal per gallon of solution. The stripping rate of electroless nickel depends on the phosphorus content. A phosphorus level of 5% or less will strip at the same rate as electrolytic nickel. Higher phosphorus deposits take slightly longer.

**STRIPPER NCNS** is easy to make up and use. It requires no current or special equipment. Operating cost are lower than competitive cyanide or non-cyanide systems.

**STRIPPER NCNS** is an extremely versatile product. It operates over a wide range of temperatures and operating conditions. When used properly, will not attack base metal, thus, they are easy to use in production and minimum operator attention is required.

**STRIPPER NCNS** contains no cyanide and no chemical that would be considered hazardous or unacceptable for discharge in a public treatment facility as defined by federal standards. The material is biodegradable after removal of dissolved nickel.

## OPERATING DATA

<b>STRIPRITE STRIPPER NCNS</b>	2.5-3 lbs./gal. (300-360 g/l)
Temperature	120-160° F. (48-71° C)
Agitation	Air / Mechanical
pH	9.2-9.8

### SOLUTION MAKE-UP

- 1) Fill tank ½ full with tap water.
- 2) Add required amount of **STRIPRITE STRIPPER NCNS**.
- 3) Fill tank with water and heat.
- 4) When material is dissolved, bath is ready to use. Check bath pH. If necessary, raise pH by slowly stirring in soda ash until proper pH is obtained.

A small amount of material will float in the solution after mixing, which is normal and need not be of concern. Parts immersed should be suspended in solution not touching the bottom or sides of the tank or heating coils. Parts should be spaced slightly to allow circulation of the stripper solution to avoid point contact problems.

### BATH OPERATION

After removing all chromium, immerse parts in the Stripper solution. Racked parts should be suspended in solution without touching the bottom or sides of the tank or heating coils. Parts should be slightly spaced to allow circulation of the 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.

### TEMPERATURE

The solution may be operated at any temperature within the recommended range. The higher the temperature, the faster the stripping rate, the lower the temperature, the slower the stripping rate. To prolong bath life, heating should be discontinued immediately after use. If steam heat is being utilized, it is recommended that agitation be directed at, or placed under the steam coils to quickly move the solution from under the coils or place coils in a separate compartment filled with water.

### SOLUTION CONTROL

The slowing down of the stripping rate will indicate when replenishment additions are necessary.

#### Analytical:

- 1) Pipet a 1 ml sample in to 250 ml flask.
- 2) Add 75 ml of distilled water.
- 3) Add 5 ml of concentrated Ammonium Hydroxide to the flask.
- 4) Add a pinch of Murexide Indicator.
- 5) Titrate with 0.0575 M EDTA to a purple endpoint.

**Calculation:** Mls of 0.0575 EDTA X 0.45 = oz/gal (x 3.38 = g/l) nickel metal content.

Add 0.60 lbs. of **STRIPPER NCNS** per gallon of tank volume per ounce of nickel to return stripping bath to original condition. It may be more economical to make up and deplete a **STRIPPER NCNS** bath, depending on the operational factors unique to each installation.

## BATH LIFE

The life of the solution depends on many factors, such as the amount and type of dissolved metal in the solution, the amount and type of any soil dragged in, the operating temperature utilized, etc. Because of this, it is very difficult to predict bath life in absolute terms. When replenishment additions equal to the original make up amount have been made, the solution should be discarded.

## POST TREATMENT

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

- 1) A 30% by volume solution of hydrochloric acid will remove the smut in most cases.
- 2) A dip of chromic acid at 1 lb/gallon.
- 3) Reverse current at 6 volts or greater while the part is in the strip tank is effective but will shorten bath life. Watch for etching of high nickel steels.
- 4) A separate bath made up of 50% spent strip and 50% new strip made up at 1 lb/ gallon with reverse current.
- 5) If stripping thin coats of electrolytic nickel(.2-.4 mls) the smut can be removed during normal cleaning cycle prior to plating. If residual smut is detected after acid, repeat the process.

## ELECTROLESS NICKEL STRIPPING

**STRIPPER NCNS** provides superior results when used for removal of electroless nickel coatings. When stripping coatings containing less than 5% phosphorus, follow normal bath operating procedures outlined in this Tech Data Sheet.

When stripping 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. This process, however, is not as effective after the bath passes half life.

Fast removal of higher phosphorus e-nickel coatings (above 10-15%), apply 3 volts of reverse current to the parts during the stripping cycle. The electrical current utilized is only to dissolve the phosphorus in the deposit allowing the **STRIPPER NCNS** to strip the nickel. A DC power supply capable of 6 volts or more and the capacity to provide 20 ASF of surface area. This should be employed for steel substrates only.

Heating the part prior to stripping often speeds the process of removal of the coating. Heat the part to 450° F. for 1 hour with immediate immersion in the stripping solution will reduce required stripping time.

Electroless nickel baths contain stabilizers which prevent bath collapse and spontaneous plateout. After stripping, these stabilizers are concentrated in the smut. Occasionally, a stripped part that looks smut free actually has trapped stabilizers which cling invisibly in the cracks and pores of the metal and may cause pitting when the part is replated. If pitting occurs, it is recommended that the electrical smut removal process described earlier in this bulletin be employed after stripping. When stripping a low-phos e-nickel in a new stripping bath, the operator may often note the absence of smut on the part and will be led to think that stripping is not occurring. This is not uncommon in a new bath and as the bath ages, smut will begin appearing on the parts.

## EQUIPMENT

**Tanks:** Steel or stainless tanks. **Heaters:** Stainless Steel, titanium or Teflon immersion heaters, steam coils, or plate coils. Steam coils should never be placed directly in stripper solution. Steam coils should be in a separate compartment filled with water to make the heating process more gentle. *Failure to follow heating and agitation recommendations can shorten the life of the stripper significantly.* **Parts Handling:** Baskets, racks, and holders should also be made of stainless steel. Do not use lead lined tanks, lead coils, or soldered or braised joints below solution level. **Ventilation:** At elevated temperatures, there will be a small amount of vapor given off. Exhaust ventilation is always recommended to remove the vapor as well as the steam vapor which may be given off. Proper ventilation equipment is available from **A Brite**.

## CONVERSION INFORMATION

Proprietary strippers vary from one manufacturer to another, even though products may be designed to perform similar functions. Conversion of an existing metal stripping solution to **STRIPPER NCNS** is not possible. Furthermore, the low cost of **STRIPPER NCNS** makes it more attractive to discard the present solution and begin with a new make up of **STRIPPER NCNS** when a change is contemplated.

## OPERATIONAL NOTES

- **STRIPPER NCNS** solutions do not contain surfactants or detergents. Hence, they will not remove oils, greases, polishing compounds, etc.. In fact, drag-in of these contaminants will adversely affect solution life. Dirty parts should be cleaned prior to immersion in the stripper solution using standard cleaning methods.
- Sludge should not be allowed to deposit on the work being stripped, otherwise there is a chance of etching the base metal. The build up of a small amount of sludge in the operating solution is normal. Precautions should be taken to insure that air agitation of the solution or the parts being stripped, is the easiest means of accomplishing this. Also, care should be taken not to allow parts being stripped to come into contact with the sludge that accumulates in the bottom of the stripping tank. This will also minimize the possibility of any attack on the base metal.
- Allow to cool to room temperature when not in use to prolong life.
- For stripping of nickel off brass, copper, and zinc die-cast **STRIPPER NCB** is recommended.
- Agitation or circulation of the stripper solution is required to prevent stratification of the bath. Mild air, or mechanical agitation such as stir mixer, circulation of solution with pump or tumbling are satisfactory. *Failure to follow heating and agitation recommendations can shorten the life of the stripper significantly.*

## STORAGE/HANDLING

**STRIPPER NCNS** powder is stable and exhibits excellent shelf life. It should be stored in a dry area, and in closed containers. **Refer to the Material Safety Data Sheet for more complete information before using this product.**

The use of **STRIPPER NCNS** solutions require the handling of nickel bearing materials. Avoid contact with organic materials, reducing agents, and acids. Do not allow the salts or solutions to come in contact with skin or eyes. Use proper ventilation. Wear proper protective clothing and safety gear. In event of contact, flush immediately with large volumes of water and contact physician.

## WASTE TREATMENT

Spent solutions and their effluents, contain complexed metals from the dissolved plated coatings. The effluent and spent solution must be treated before disposal. The chelation of this solution may be broken and the metals present precipitated by the use of **ENVIROBRITE SUPER DROP OUT**. **A BRITE ENVIRONMENTAL** maintains a technical staff to assist customers with waste treatment equipment, waste treatment chemistry and the knowledge to maintain compliance with all regulations.

## WARRANTY

The information presented herein, while not guaranteed, is to the best of our knowledge true and accurate. No warranty or guarantee expressed or implied is made regarding the performance of any products, since the manner of use is beyond our control. No suggestion for product use nor anything contained herein, shall be construed as a recommendation for its use in infringement of any existing patent, and we assume no responsibility or liability for operations which do infringe any such patents. The above includes confidential and information of **A BRITE** and is furnished to you for your use solely on products or processes supplied to you by us.