



ANODEX[®] NP-2

Product Code: 110203

DESCRIPTION

Anodex NP-2 is an alkaline, detergent, highly conductive cleaning material used for electrocleaning. Used under the proper conditions and with the right cleaning cycle, Anodex NP-2 assures you a bright, smut-free surface for subsequent electrodeposits. The brightness and uniformity of the electrodeposit is improved because Anodex NP-2 removes all organic and inert films from pores of the basis metal.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

Features	Benefits
High conductivity	Bright, smut-free work Faster cleaning
Superior detergency	Free rinsing Removes organic films
Controlled foam	No hydrogen pops No carry over





OPERATING CONDITIONS & EQUIPMENT

Anodex NP-2 operates over a wide range of conditions; however, for the most efficient cleaning, we recommend the following:

Parameter	Optimum
Tank and Heating Coil	Steel*
Concentration	60 - 120 g/l (8 - 16 oz/gal)
Temperature	71° - 88°C (160° - 190°F)
Polarity	Reverse current; i.e. work as anode
Current Density	5.4 to 13.5 amps/sq dm (50 to 125 amps/sq ft) at 6 volts
Time Required	1 to 3 minutes (additional time not
Voltage	6 to 9
Cathodes	Nickel Plated Steel (perforated)

*A tank design incorporating a dam overflow weir, grease trap, and recirculating pump is highly recommended.

A minimum current density of 2.7 amps/sq dm (25 amps/sq ft) is essential for effective cleaning. Reverse cleaning has the advantage of removing smut and other films which may contribute to roughness, poor corrosion resistance, cloudy electrodeposit, and poor adherence. The elimination of these films results in maximum adhesion and luster. In all cases, the use of removable nickel plated electrodes is recommended. The electrodes should be removed periodically and cleaned to remove deposits of soil.





MAKE UP PROCEDURE

CAUTION: Considerable heat is generated when Anodex NP-2 is dissolved in water. A new solution should be prepared by filling the tank half full of warm water, 49-54°C (120-130°F) and slowly adding Anodex NP-2 while continuously stirring. After solution is complete, bring the tank to volume with cold water. Heat or cool to operating temperature before use. Goggles should be worn to protect the eyes.

SOLUTION MAINTENANCE

For Cleaning Steel

1. Anodex NP-2, 90g/l (12 oz/gal), 83°C (180°F), 8.1 amps/sq dm (75 amps/sq ft), 6 volts, 1 to 2 minutes reverse current.
2. Water rinse.
3. 120 - 240 g/l (1 to 2 lbs/gal) Metex Acid Salt M-639 (Data Sheet No. 13071), room temperature.
4. Water rinse.
5. Water rinse.
6. Anodex NP-2, 90 g/l (12 oz/gal), 83°C (180°F), 8.1 amps/sq dm (75 amps/sq ft), 6 volts, 30 seconds to 1 minute, reverse current.
7. Water rinse.
8. 120 - 240 g/l (1 to 2 lbs/gal) Metex Acid Salt M-639, room temperature.
9. Water rinse.
10. Electroplate.

The above double cleaning cycle is the most effective to use when substantial quantities of surface contaminants are to be removed. It is the most foolproof procedure to use for cleaning when removing carbon, smut, scale, rust or other inorganic materials.

Where the material is not as difficult to remove, the cycle can be shortened so that Step 5 can be followed by electroplating.

In all cases if the electrocleaning time for Step 1 above exceeds two minutes, it is good practice to use two separate tanks so that the first tank takes off the bulk of the material being removed. When it is time to dump the cleaners, the first cleaner can be dumped and the second one pumped into the first tank. The second cleaner is made up fresh. This procedure reduces the cleaning cost and assures free, easy rinsing out of the second cleaner.





For Stripping Chromium from Nickel

1. Anodex NP-2, 60 g/l (8 oz/gal), 83°C (180°F), 6 volts, work anodic.
2. Cold water rinse.
3. Dry.

Trouble Shooting:

1. Determine if the polarity is correct. Cleaning problems have been traced to the use of incorrect polarity.
2. Burning of work in electrocleaners may be due to one or more of the following factors:
 - a. Low temperature or concentration
 - b. High voltage
 - c. High current density
 - d. Improper cleaning compound for basis metal
3. Check the cleaning current density. A low current density may be due to polarized cleaning electrodes. The electrodes should be removed and cleaned periodically.

ANALYTICAL PROCEDURES

1. Test Kit

Factor - 4.00 x drops = g/l Anodex NP-2
0.53 x drops = oz/gal Anodex NP-2

Test kits are available, at no charge, upon request to MacDermid Enthone Inc. The accuracy of the test kit procedure is within about 10%. If an analytical procedure is desired for greater accuracy, use titration.

2. Titration

- a. Pipette a 10.0 sample into a 250 ml Erlenmeyer flask, and dilute with 50 ml H₂O.
- b. Add 3 to 5 drops phenolphthalein indicator solution.
- c. Titrate with 0.5 Normal hydrochloric acid until pink color just disappears.
- d. Calculation:

mls of 0.5N acid x 2.94 = g/l Anodex NP-2
mls of 0.5N acid x 0.39 = oz/gal Anodex NP-2





SAFETY & WARNING

MacDermid Enthone recommends that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use.

Safety Data Sheets are available from MacDermid Enthone.

WASTE TREATMENT

Prior to using any recommendations or suggestions by MacDermid Enthone for waste treatment, the user is required to know the appropriate local/state/federal regulations for on-site or off-site treatment which may require permits. If there is any conflict regarding our recommendations, local/state/federal regulations take precedent.

ORDER INFORMATION

Product	Code
Anodex NP-2`	110203

CONTACT INFORMATION

To confirm this is the most recent issue, please contact MacDermid Enthone
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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency directory assistance Chemtrec 1 - 800 - 424 - 9300.

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