



TIFOO

NICKEL ELECTROLYTE PLATING SOLUTION

MANUAL

CHROME ELECTROLYTE

Security

Please work with gloves and safety glasses. Please read the indications on the label before using the product.

Application fields

The nickel electrolyte is the ideal barrier layer for gilding, chrome-plating or silver-plating of iron, steel, copper or brass objects. One example is the direct gilding of copper: after some time, there will be a red colouration of the gold layer, but if you apply a barrier layer made of nickel before gilding, this will NOT happen. Nickel-plating is also very important for chrome-plating iron and steel pieces. Actually, you never chrome-plate something without nickel-plating it before. Otherwise, the bright Tifoo Nickel electrolyte is a bright and aesthetic finish for surfaces. Still keep in mind that nickel is an allergen. So try to avoid contact with skin and food. If you want to gild on the nickel layer, please make sure that the gold layer will be relatively thick, as if not, the allergen effect can appear again.

Suitable material for nickel-plating:

iron, steel, nickel, copper, brass, silver, tin, lead, gold

Unsuitable:

stainless steel, chrome, aluminium, titanium

Using the nickel electrolyte

Work with nickel anodes (available in different sizes in our shop under "plating accessories") to have a gleaming effect. Connect the object in question to the negative pole and the nickel anodes to the positive pole of your power supply. Adjust the voltage to about 2-3 volts. In this case, it is especially important that there are no hydrogen bubbles. These cause a deposition of black nickel on the parts with the gas formation. If you can observe gas formation on the object, decrease the voltage to the point where there is no more bubble formation. But only adjust to this point because with too low voltage, a sufficient gleaming effect on the surface can't be achieved. For pen plating, please use the Tifoo nickel rod anodes and a voltage of at least 2-3 volts.

Specifications of nickel electrolyte:

Only for commercial clients!

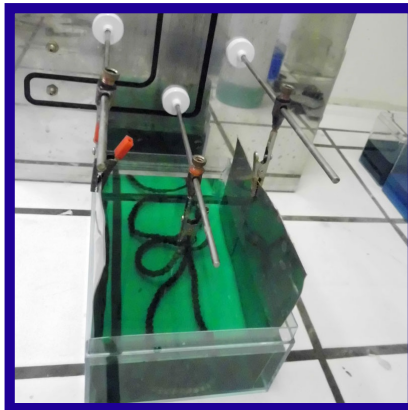
Current density: 1-1,5 A/dm²

pH range: weakly acidic

Voltage range for tank plating: 2-3 volts

Application example

In this example, a gilded (the gilding was already damaged on many parts) African brass necklace (left picture) has been nickel-plated with Tifoo Nickel electrolyte plating solution and gilded afterwards. First, the object has been degreased, then dipped in Tifoo Copper Cleaner and rinsed with water. Afterwards, the necklace has been electroplated with 2.6 volts (current of about 1 A) for 2 hours (middle picture). The necklace now gleamed in a beautiful nickel colour (right picture). Afterwards, it has been gilded with the gold electrolyte FLASH (not illustrated).



Hints and trouble shooting

- What can I do when the layers created by the nickel plating solution aren't shiny anymore?

- 1) Check the pH-value: it should be below 5; perhaps balance with sulfuric acid
 - 2) Is there some sediment at the bottom? If yes, please also check the pH-value and adjust it again to make the sediment go away and the plating solution should become clear again. If not, filter the plating solution.
 - 3) Has the brightener been used completely? You can purchase new brighteners on request.
- Please only use nickel anodes (magnetic test on the anodes before use). If you use wrong anodes, you might destroy the plating solution irreversibly.
- **Important:** We recommend to go on with the treatment directly after the nickel-plating if you want to plate other metals on it. If longer breaks can't be avoided (several hours or a few days), an activation of the nickel layer with acid will be necessary.

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