



TIFOO

CHROME ELECTROLYTE PLATING SOLUTION

MANUAL

CHROME ELECTROLYTE

Security

This electrolyte does not contain any very toxic chrome-(VI)-salts, but the less problematic chrome-(III)-salts. Still you should wear gloves and safety glasses when working with this product.

Application fields

Chrome is an ideal finish for a lot of materials, as it doesn't tarnish and keeps its colour. Please keep in mind that the **Tifoo Chrome electrolyte is preferably used for pen plating**. While using it for tank plating, you have to work with a lot of limitations. You can only deposit usable and relatively thin layers with aluminium anodes with very high current densities (15-20 A/dm²).

For pen plating, please use the chrome electrolyte exclusively with nickel rod anodes (see accessories in our shop). The reason for that is a strong formation of chlorine gas when working with graphite, whereas stainless steel anodes will make the chrome layer very dark and stained.

Please keep in mind: When using the recommended method with nickel rod anodes, a bright chrome-nickel-layer will be deposited. This alloy is a chemically highly resistant material and very resistant to corrosion resistant (see "Inconel"). This method is therefore not recommended for applications that need a very pure chrome layer.

Suitable materials:

Ideally, you should prime objects with nickel.

However, chrome-plating can be applied directly onto: copper, brass, bronze, silver, gold, nickel silver

Unsuitable: **aluminium (except when nickel-plated before with Nickel-Star), titanium, zinc, tungsten**

Using the chrome electrolyte

Pen/Brush plating

It is obligatory to work with nickel rod anodes when using pen plating. The chrome electrolyte is only suitable for the GalvanoBRUSH. You will NOT achieve good results with the GalvanoPEN.

Connect the Galvano BRUSH to the positive pole and clamp the piece you want to chrome-plate to the negative pole. Set the current flow to about 2-3 amperes (normally achieved between 6 and 10 volts). Slowly increase the current with the voltage regulator at its maximum (make sure to adjust to 0 amperes at the beginning). Apply to the object in circular motions. Make sure that there are no higher current strengths, as this would result in porous layers. In the beginning, stay longer on one spot because it needs some "activation time" to start with the chrome deposition. Please rinse the object with clear water after chrome-plating.

Tank - or Immersion plating

Here, the chrome electrolyte can only be used with limitations and even then, the deposited layers are very thin. Work with aluminium plate anodes and try to work with a current density of 20 A/dm². Guarantee a favourable distribution of the aluminium anodes: For example, if you want to chrome-plate a metal sheet, put it into the centre and connect one aluminium anode in front of each side (front and back). After a few minutes, a bright chrome layer will be deposited. Only very little chrome can be deposited with the immersion because the high current flow will quickly render the electrolyte useless (max. 200 - 400 mg).

Specifications of chrome electrolyte:

pH: ~ 3

Current density for tank plating: 20 A/dm²

Chrome content: 24 g / l

Application example

Depicted below is an application example on a rusty bicycle handlebar. With the chrome electrolyte and pen plating, it was possible to restore its shine. A great look gets combined with an excellent corrosion protection!



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