SurTec® 848
Antique Nickel Process

Properties

- for deposition of dark decorative nickel layers
- cyanide alkaline electrolyte
- suitable for rack and barrel applications
- high wear resistance
- high ductility
- resistant to halogen solvent solutions and to common washing agents
- protection with a clear lacquer is recommended

Application

make-up values:

SurTec 848 Antique Nickel	150 g/l	(120-175 g/l, according to the colour)
potassium cyanide	4 g/l	(3.5-5 g/l)

make-up: Steps for make-up:

1. Clean the tank thoroughly.
2. Pour 40°C warm deionised water into the tank.
3. Add SurTec 848 Antique Nickel and potassium cyanide and mix well.
4. After cooling down to room temperature fill up to the final volume.

temperature: 20-25°C

cathodic current density: 0.3 A/dm^2 (0.05-0.5 A/dm^2)

pH-value: approx. 10

application time: 10-20 min

anodes: pure nickel anodes (DIN 1702) in anode bags

ratio anode : cathode: 2:1

tank material: PP- or plastic tanks, or steel tank coated with plastic

agitation: rack movement or barrel rotation

filtration: recommended

heating: possibly needed during winter time

cooling: possibly needed during summer time

exhaust: required for worker´s protection

hints: The colour of the deposited layer can be varied with the concentration of SurTec 848 Antique Nickel.

The cyanide content also may influence the colour: Very low cyanide concentrations (< 2 g/l) lead to more light brown/yellow depositions. Very high concentrations of cyanide (> 14 g/l) impede the deposition of nickel, so no layer is formed.

Technical Specification

(at 20°C)	Appearance	Bulk density (kg/l)	pH-value (at 50 g/l)
SurTec 848	powder, white-green	1.000 (0.89-1.11)	approx. 9

Maintenance and Analysis

Check the pH-value and analyse and adjust the concentration of SurTec 848 regularly.

Sample Preparation

Take a sample at a homogeneously mixed position. If the sample is turbid, let the turbidity settle down and decant or filter the solution.

SurTec 848 – Analysis by Titration

reagents:
0.1 mol/l EDTA solution (Titriplex III)
ammonia solution (conc.) p. a.
indicator: Murexid (1:100 with NaCl)

procedure:
1. Pipette 10 ml bath sample into a 250 ml Erlenmeyer flask.
2. Dilute with approx. 50 ml deionised water.
3. Add 10 ml ammonia solution.
4. Add a spatula tip of indicator.
5. Titrate with 0.1 M EDTA solution from yellow to violet.
   (If the end point is hard to see, heat the sample up to 60°C and titrate hot.)

calculation: consumption in ml · 16.7 = g/l SurTec 848

Ingredients

- nickel salts
- stabilizer

Consumption and Stock Keeping

The consumption depends heavily on the drag-out. To determine the exact amounts of drag-out, see SurTec Technical Letter 11.

In order to prevent delays in the production process, per 1,000 l bath the following amount should be kept in stock:

SurTec 848	100 kg

Product Safety and Ecology

The safety instructions and the instructions for environmental protection have to be followed in order to avoid hazards for people and environment. The Material Safety Data Sheets (according to European legislation) contain explicit details for this.

The following hazard designations and classifications into water hazard classes (WHC) have to be taken into account:

product	*hazard designation*	*water hazard class*
SurTec 848	T - Toxic N - Dangerous for the environment	WHC 2

Warranty

We are responsible for our products in the context of the valid legal regulations. The warranty exclusively accesses for the delivered state of a product. Warranties and claims for damages after the subsequent treatment of our products do not exist. For details please consider our general terms and conditions.

Further Information and Contact

In our forum, you can discuss topics of the surface technology:
http://forum.SurTec.com/

If you have any questions concerning the process, please contact your local technical department: http://SurTec.com/International.html

6 October 2011/DK, AB