

SurTec® 652 Q

Cyanide-free Zincate Treatment

Properties

- cyanide free, alloyed zincate process
- concentrated liquid, useable directly after dilution in water
- applicable in immersion process
- produces smooth, fine grained zincate layers on pre-treated aluminium parts
- the zincate layer protects the aluminium surface from oxidation during transfer to the plating tank and provides an adherent plating layer

Application

make-up value:	60 %vol	(55-65 %vol)
temperature:	20 °C	(15-40 °C)
application time:	1 min	(10 s to 2 min)
tank material:	steel, stainless steel, PE, PVC or PPH	
heating:	if necessary, out of steel or stainless steel	
agitation:	light mechanical or low pressure air agitation	
exhaust:	not required, normal ventilation recommended	

recommended process sequence:

1. immersion cleaning, e.g. SurTec 133
2. rinse
3. alkaline etching, e.g. SurTec 181
4. rinse
5. desmutting, e.g. SurTec 495 L
or 50 % nitric acid (53 %)
6. rinse
7. aluminium pre-plating process SurTec 652 Q
8. rinse
9. further plating

Note: For optimum results it may be necessary to double zincate by stripping the zincate layer in 50 % nitric acid (53 %) and reapplying it before plating.

Technical Specification

(at 20 °C)	Appearance	Density (g/ml)	pH-value (conc.)
SurTec 652 Q	liquid, dark green	1.248 (1.22-1.27)	approx. 14

Maintenance and Analysis

Analyse and adjust the bath density and the concentration of NaOH regularly. To analyse the concentration of NaOH, the bath density has to be determined and adjusted before.

Sample Preparation

Take a sample at a homogeneously mixed position. Let it cool down to room temperature. If the sample is turbid, let the turbidity settle down and decant or filter the solution.

SurTec 652 Q – Analysis by Bath Density

Add SurTec 652 Q or water to maintain a bath density of 1.150 g/ml.

Concentration in %vol	Density (g/l)	Addition SurTec 652 Q in %vol
40	1.106	26.7
42.5	1.113	23.8
45	1.119	20.9
47.5	1.125	17.8
50	1.132	14.5
52.5	1.138	11.2
55	1.145	7.6
57.5	1.151	3.9
60 = optimum	1.158	0
62.5	1.164	stop addition
65	1.171	stop addition
67.5	1.177	stop addition
70	1.183	stop addition

NaOH – Analysis by Titration

reagents: barium chloride solution (20 %, BaCl₂)
indicator: phenolphthalein
1 N sulfuric acid (H₂SO₄)

procedure: Prior to the analysis, the concentration of SurTec 652 Q has to be adjusted to 60 %vol via bath density (= 1.158 g/l).

1. Pipette 5 ml bath sample into a 250 ml Erlenmeyer flask.
2. Add 25 ml barium chloride solution.
3. Add some indicator.
4. Titrate with 1 N sulfuric acid from pink to decolouration.

calculation: consumption in ml · 8 = g/l NaOH

correction: The desired value is 76 g/l NaOH.

If the concentration is less than 76 g/l it has to be adjusted accordingly.

Stock Keeping

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

SurTec 652 Q 300 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:

<u>product</u>	<u>hazard designation</u>	<u>water hazard class</u>
SurTec 652 Q	T - Toxic	WHC 3
	N - Dangerous for the environment	

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>