

SurTec® 604

Cleaner/Phosphating

for Iron, Zinc and Aluminium

Properties

- 1-component spray process
- liquid concentrated product enables automatic dosage
- cleaning and phosphating in one working step
- best cleaning power without foam
- pretreatment before painting with best corrosion protection and paint adhesion
- produces an amorphous, dense and dark bluish phosphate layer on steel
- works on electro-deposited and hot-dip galvanised zinc
- contains fluoride and is suitable for treating aluminium
- can be applied with high pressure equipment

Application

SurTec 604 is applied in spray or high pressure application.

	<i>spray application</i>	<i>high pressure application</i>
make-up values:	10 ml/l (7-15 ml/l)	25 ml/l (18-30 ml/l)
temperature:	45°C (40-50°C)	60°C (50-80°C)
pH-value:	4.2 (3.8-5.0)	4.2 (3.8-5.0)
	adjust with sodium hydroxide (10 %) only after a new make up	
application time:	2 min (1-3 min)	1 min (45 s - 2 min)
spraying pressure:	1.2 bar (1-2 bar)	75 bar (50-100 bar)

make-up: Steps for make-up:

1. Fill 1/2 of the water into the tank.
2. Dissolve the calculated amount of SurTec 604.
3. Fill up to the final volume with water.
4. Adjust the pH-value at working temperature.

tank material: acid and fluoride resistant stainless steel

heating: necessary; out of acid and fluoride resistant material

cooling: not necessary

exhaust: required for worker's protection

hints: Because of the liquid state, the product can be dosed automatically, leading to a constantly good performance.

In case of heavy contamination of the surface, e.g. paraffin, a process temperature of 70°C is recommended.

On Steel, SurTec 604 produces a coating weight of 0.5-0.7 g/m², depending on parameters and substrate.

SurTec 604 can be applied in plants with 2, 3, 4 or 5 baths. After phosphating, the surface additionally can be passivated with SurTec 580 ChromiPhos or SurTec 581 Chromium-free Passivation.

Treated aluminium additionally can be passivated to increase the corrosion protection, e.g. using the no-rinse process SurTec 641.

Technical Specification

(at 20°C)	Appearance	Density (g/ml)	pH-value (at 10 g/l)
SurTec 604	liquid, colourless - slightly yellowish	1.230 (1.21-1.25)	2.6 (2-4)

Maintenance and Analysis

Analyse and adjust the concentration of SurTec 604 regularly. Adjust the pH-value after new make-up.

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 604 – Analysis by Titration

reagents:	0.1 N sodium hydroxide solution indicator: phenolphthalein
procedure:	<ol style="list-style-type: none"> 1. Pipette 10 ml bath sample into a 250 ml Erlenmeyer flask. 2. Dilute to approx. 100 ml with deionised water. 3. Add 3 drops of indicator. 4. Titrate with 0.1 N sodium hydroxide solution from colourless to pink.
calculation:	consumption in ml · 3.1 = ml/l SurTec 604

pH-Measurement and Adjustment

Measure the pH-value at a homogeneously mixed position with a temperature compensated pH-meter. Read the value when the display is steady and adjust to the desired value (3.8-5.0) by adding slowly sodium hydroxide solution.

Ingredients

- phosphoric acid
- phosphates
- fluorides
- surfactants
- boric acid

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 604 50 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 604	Xn - Harmful	WHC 1

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>