

SurTec® 609 CC

ZetaClin

Properties

- conversion cleaner – cleaning and pretreatment prior to painting in one step
- liquid, acidic concentrate
- in combination with appropriated surfactants applicable for spray process
- suited as multi-element-pretreatment (for steel, aluminium, HDG and EG zinc and zinc die cast)
- based on trivalent chromium
- produces uniform nano-size layers
- effectuates excellent adhesion of lacquers and good corrosion protection
- very low sludge formation
- low process temperature
- free of phosphates, nitrates, zinc, nickel, manganese and VOC
- in full compliance with RoHs (EU Directive 2002/95/EC) and WEEE (EU Directive 2002/96/EC) and ELV
- IMDS-number: 127253084

Application

make-up values:

SurTec 609 CC	2 %vol	(1.5-4 %vol)
SurTec 086	0.4 %vol	(0.3-1 %vol)

analytical value:

Total Acid (TA)	6 Points	(4.5-25 Points)
-----------------	----------	-----------------

make-up:

Steps for make-up:

1. Dilute SurTec 609 CC ZetaClin concentrate with deionised water under vigorous stirring.
2. Control the pH-value and adjust it cautiously with 1 % sodium hydroxide solution to pH 4.2. The adjustment with sodium hydroxide is only necessary when preparing a new make-up. In the running process the pH-value will increase and has to be adjusted by adding the acidic concentrate SurTec 609 CC.

pH-value:

4.2 (3.8-4.8)
decrease with SurTec 609 CC ZetaClin concentrate

temperature:

45°C (40-50°C) see "hints"

application time:

3 min (1-4 min)

spray pressure:

0.8-1.2 bar

tank material:

stainless steel or steel with acid resistant coating

filtration:

recommended: filter bags with 25 µm pore size;
0.1-0.5 times filtration of the total bath volume per hour

heating:

required; out of acid resistant material

exhaust:

required for workers protection

- hints: After some time a minor amount of sludge will be formed in the bath, which does not impair the quality of the process. It can be removed, e.g. during revision or bath change by pressure cleaning.
- During processing steel parts, the colour of the passivation bath turns from light green to red-brown.
- The colour of the processed parts depends on material and alloy. Steel surfaces will appear silver to brass/gold. Aluminium surfaces will appear colourless to yellowish.
- At temperatures above 50°C the product decomposes and the coating quality will be impaired.
- storage: During storage, in SurTec 609 CC ZetaClin a slight white-green precipitation may occur. This will impair neither quality nor function of the product.
- recommended process sequence:
1. cleaning/passivation
SurTec 609 CC ZetaClin / SurTec 086
 2. rinsing
 3. DI-rinsing (maximum 50 µS/cm)
 4. hot air drying

Maintenance and Analysis

The pH-value has to be maintained in the desired range. It should be controlled at least 2 times per shift. Usually, adjusting the pH-value with SurTec 609 CC ZetaClin concentrate is sufficient to maintain the bath.

As additional measurement, the Total Acidity (TA) of the bath can be analysed.

Due to drag in of impurities like inorganic or organic salts, the Total Acidity is influenced and will rise. If the analytical value exceeds 25 TA-Points it is recommendable to prepare a new bath make-up.

If desired, the chromium content (desired value > 15 ppm) can be analysed in the SurTec laboratory, in order to control the components of the bath in detail.

pH-Measurement

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 by slow additions of SurTec 609 CC ZetaClin to the desired pH-value (pH 3.8-4.8).

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.

Total Acid (TA) – Analysis by Titrtion

reagents: 0.1 N sodium hydroxide solution
indicator: phenolphthalein

procedure: 1. Pipette 100 ml bath sample into a 250 ml Erlenmeyer flask.
2. Add 3 drops of indicator.
3. Titrate with 0.1 N sodium hydroxide solution from colourless to pink.

calculation: consumption in ml = TA-Points

Technical Specification

(at 20°C)	Appearance	Density (g/ml)	pH-value (conc.)
SurTec 609 CC	liquid, green, clear	1.016 (1.00-1.03)	1.5 (1-2)

Ingredients

- chromium(III) salts
- fluorides

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 609 CC ZetaClin 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:

<u>product</u>	<u>hazard designation</u>	<u>water hazard class</u>
SurTec 609 CC	-	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>