

SurTec® 657

Green Chromating

Properties

- acidic liquid
- generates conversion layers with good adhesion and corrosion protection properties on aluminium and zinc steel surfaces
- applicable in immersion as well as in spray processes
- fulfils all appropriate quality requirements
- weight of the green chromating layer produced by SurTec 657 can be controlled via SurTec 657 A
- by post-treatment with SurTec 550, layers can be created which are classified as chromium(VI)-free

Application

The process SurTec 657 includes the following products:

- SurTec 657 Green Chromating is responsible for the good adhesion and corrosion protection of the conversion layers
- SurTec 657 A Activator is especially attuned to the SurTec 657 Green Chromating agent, to control the layer weight of the green chromating and to assure an extremely long life time of the bath

make-up values:	<i>immersion</i>	<i>spray</i>
SurTec 657	20 g/l	15 g/l
SurTec 657 A	0.5-3.0 g/l	0.5-3.0 g/l
application time:		
<i>aluminium</i>	60-300 s	60-300 s
<i>zinc</i>	30-120 s	30-120 s
temperature:	20-40 °C	20-40 °C
pH-value:	< 1	< 1
tank material:	fluoride resistant stainless steel or PP tanks	
heating:	required, made of acid resistant material	
exhaust:	required for worker's protection	
filtration:	recommended	
hint:	Bath should be prepared with DI-water (conductivity max. 50 µs/cm) or soft tap water.	

Technical Specification

(at 20 °C)	Appearance	Density (g/ml)	pH-value (conc.)
SurTec 657	liquid, orange-red	1.450 (1.38-1.52)	< 1
SurTec 657 A	liquid, colourless, clear - slightly turbid	1.080 (1.05-1.11)	< 1

Maintenance and Analysis

Analyse and adjust the concentration of SurTec 657 regularly. When replenishing SurTec 657 according to the analytical results it is necessary to add SurTec 657 A Activator as well. Per litre of added SurTec 657, add 0.3 litres of SurTec 657 A Activator.

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 657 – Analysis by Titration

reagents:	sulfuric acid (25 %) potassium iodide (KI, p.a.) 0.1 mol/l sodium thiosulfate solution (= 0.1 N Na ₂ S ₂ O ₃ solution) starch solution (5 g/l starch dissolved in water, boiled for 15 min)
procedure:	<ol style="list-style-type: none">1. Pipette 10 ml bath sample into a 300 ml Erlenmeyer flask.2. Dilute to 100 ml with deionised water.3. Acidify with 20 ml sulfuric acid.4. Add 2-3 g potassium iodide and stir well.5. Allow the mixture to react for one minute.6. Titrate with 0.1 mol/l sodium thiosulfate solution to yellow colouration.7. Add 1-2 ml starch solution (solution becomes purple).8. Continue titrating to a light bluish-green colouration of the solution.
calculation:	consumption ml · 2.3 = g/l SurTec 657
nominal values:	15-20 g/l SurTec 657 = 6.5-8.7 ml 0.1 N sodium thiosulfate solution

Ingredients

SurTec 657

- inorganic acids
- chromium(VI)oxide

SurTec 657 A

- hydrofluoric acid

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](#).

For spray and immersion application the following values per m² can be taken as estimated average consumption:

SurTec 657	6 g
SurTec 657 A	3 g

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

SurTec 657	50 kg
SurTec 657 A	25 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 657	T - Toxic N - Dangerous for the environment	WHC 3
SurTec 657 A	T+ - Very toxic C - Corrosive	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>

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