

SurTec 182

Alkaline Etching Cleaner

Properties

- liquid, alkaline etching degreaser
- surface activating and medium emulsifying
- suited for degreasing as well as etching
- removes strong adherent lubricants and films
- high bath loading capability
- special composition of ingredients results in long service life
- due to suitable complexing agents the etching bath is resistant up to 15 g/l of aluminium
- both components SurTec 182 A and SurTec 182 B are suited for automatic dosage

Application

The process SurTec 182 includes the following products:

- SurTec 182 A is a cleaning and emulsifying product
- SurTec 182 B has good attack capability

For immersion application:

make-up values:

SurTec 182 A	30-40 g/l
SurTec 182 B	2 - 5 g/l

application time: 5-15 min

temperature: 60-80 °C

pH-value: 12-12.5

tank material: heatable steel tanks (ST 37)

heating: required, made of alkaline resistant material

exhaust: required for worker's protection

hints: Tap water or well water can always be used for initial preparation.

Energy saving instructions:

to avoid losses of heat, it is recommended to insulate the outer walls of the tank.

To achieve the maximum cleansing effect in immersion application the solution must be circulated by flow, air injection or movement of work pieces.

Technical Specification

(at 20 °C)	Appearance	Density (g/ml)	pH-value (conc.)
SurTec 182 A	liquid, light yellow	1.17 (1.14-1.20)	9.6 ± 0.2
SurTec 182 B	liquid, yellowish	1.38 (1.35-1.41)	14.0 ± 0.2

Maintenance and Analysis

As by the etching process itself and by the cleansing of the aluminium constantly bath liquid is dragged-out and the contamination is carried in, the active substances will be consumed. Consequently analyse the content of the active substances in the degreasing bath and adjust by addition of the components SurTec 182 A and B.

Replenish SurTec 182 A at a ratio of 1:10 to SurTec 182 B.

Sample Preparation

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

SurTec 182 B and Aluminium – Analysis by Titration

reagents:	1 mol/l hydrochloric acid (1 N HCl) potassium fluoride solution (KF solution, 35 %) indicator: phenolphthalein (1 % in 70 % ethanol)
procedure:	<ol style="list-style-type: none">1. Pipette 50 ml bath sample into a 300 ml Erlenmeyer flask.2. Dilute to approx. 100 ml with deionised water.3. Add 3-4 drops of the indicator solution (pink colouration).4. Titrate with 1 mol/l hydrochloric acid from pink to colourless, consumption A (ml).5. Add 25 ml of potassium fluoride solution.6. Titrate once again with 1 mol/l hydrochloric acid from pink to colourless.7. Boil up the solution while stirring for approx. 3 min, until the colour of the solution changes to pink again.8. Titrate concluding with 1 mol/l hydrochloric acid (without filling up the burette) until complete discolouration of the solution, consumption B (ml).
calculation:	$(\text{consumption A in ml} - 1/3 \text{ consumption B in ml}) \cdot 3.4$ $= \text{g/l SurTec 182 B}$ $\text{consumption B (ml)} / 5.66 = \text{g/l aluminium}$
nominal values:	content: 2-5 g/l SurTec 182 B (<i>immersion</i>) consumption: 0.6-1.5 ml of 1 mol/l hydrochloric acid (if aluminium = 0 g/l) content: 1-3 g/l SurTec 182 B (<i>spraying</i>) consumption: 0.3-0.9 ml of 1 mol/l hydrochloric acid (if aluminium = 0 g/l)

Ingredients

SurTec 182 A

- gluconates
- surfactants

SurTec 182 B

- alkali hydroxides
- complexing agent

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](#).

The following values per m² can be taken as estimated average consumption:

SurTec 182 A 1.0-1.2 g

SurTec 182 B 10-12 g

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

SurTec 182 A 50-75 kg (for make-up only)

SurTec 182 B 25 kg (for make-up only)

50 kg (in operation)

Product Safety and Ecology

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

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 182 A	Xi - Irritant	WHC 1
SurTec 182 B	C - Corrosive	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>