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- Product information -

## Nabutan 310

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### Chrome-free pre-treatment for aluminium and aluminium alloys

Appearance:	colourless liquid
pH-value (1 %):	approx. 2.7
Density	approx. 1.05 g/ml
Component substances:	inorganic acids, polymers, auxiliary agents

#### Properties:

**Nabutan 310** is a chrome-free no-rinse surface treatment product for aluminium and aluminium alloys. The resistance to corrosion of the treated metal and the adherence of subsequent paint coats will be lasting improved by an transparent passivation layer based on titanium-polymer complexes.

#### Application:

**Nabutan 310** is a preferred product for dipping and spraying applications. For preparation and activation of the aluminium surface a thorough degreasing and etching is necessary.

Additional a first-class rinsing is necessary. The last rinse before the Nabutan 310 bath has to be a DI-water rinse. With this measurement a carry-over of process chemicals could be prevented. After the VE rinse the dripping-off water should reach a conductivity of smaller 30 µS/cm.

The chrome-free passivation bath is prepared with DI water. There is no more rinsing after the passivation (No-Rinse), the parts will be dried immediately.

A dryer is suitable for the drying of the Nabutan layer. The temperature in the dryer can be up to 180°C. A drying temperature over this point is energetically inefficient and expensive. Holders of quality seals and quality communities find details to the specific drying temperature in the operating procedure.

In the pretreatment of aluminium in architecture, we recommend to follow the specific guidelines of the appropriate quality organizations. For further questions, the application technique of Nabu Oberflächentechnik GmbH is available.

**Parameter:**Normal operating conditions

Start-Concentration: 0,5- 2 % **Nabutan 310** in D.I.-water

Temperature: 20 °C - 35 °C\*

Time: approx. 15 – 60 sec. (spray application)  
60 – 120 sec. (immersion process)

Spray pressure: 0,5 – 1,0 bar (depending on plant application)

Points A: 2 - 6  
B: maximum 2,0

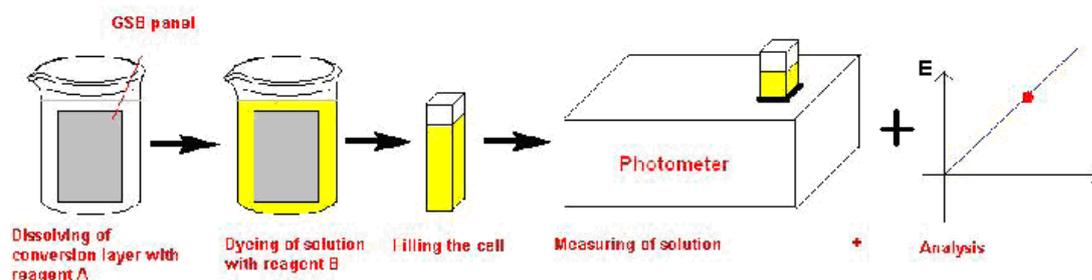
pH-Value: spraying: 2,8 - 3,3  
dipping: 2,8 - 3,2

Layer weight: 10 – 80 mg/m<sup>2</sup> **Nabutan 310**

\*The heating of the passivation bath has to be limited up to 60°C contact-temperature. In the case of constant high temperature of > 30°C a cooling is necessary.

The parameter and best layer weight are specific for each line and have to be fixed for each line in a work instruction.

The layer weight will be measured by photometer or x-ray fluorescence measurement. The execution of the layer-weight measurement is described in the analytical method number 50.



**Bath monitoring :** **Nabutan 310** bath will be controlled by

- pH-value
- conductivity
- number of points (A, B).
- bath temperature

To achieve a constant layer weight, the parameters should be kept constant.

**Points A:**

100 ml of the bath and 10 drops Bromphenol blue-Indicator will be titrated with 0,1 mol/l Sodium Hydroxide until a light blue colour develops. The consumed ml 0,1 mol/l Sodium hydroxide = number of points A

**Points B:**

10 ml of the bath and 10 drops Phenolphthalein Indicator will be titrated with 0,1 mol/l Sodium Hydroxide until a light pink colour appears and remains for 10 seconds.

The consumed ml 0,1 mol/l Sodium hydroxide = number of points B

### Limits on Ion Contamination:

The specification of the limits for foreign ions based on the experience from practical applications. They serve only as a guide indication. Is there a combination of several foreign ions, the limit values can be lower.

iron < 5 ppm	chloride < 5 ppm
copper < 3 ppm	phosphate < 10 ppm
zinc < 5 ppm	sulfate < 10 ppm
calcium/magnesium < 10 ppm	

### Replenishment

a) Addition about conductivity:

The **Nabutan 310** bath can be controlled automatically with a conductivity meter and a proportioning pump.

b) For each missing point A add 3 l **Nabutan 310** (for 1.000 l bath volume).

By exceeding the maximum of points B a part of the bath should be renewed.

**Plant material:** Acid and fluoride resistant stainless steel or plastic.

### Safety instructions

**Nabutan 310** is a subject to the hazardous substances regulations. It is essential when working with this product to wear rubber gloves and clothing which protects against acid.

### Processing the effluent:

The spent bath solution is neutralized with lime or hydrated lime and disposed of in accordance with official regulations.

### Storage:

Store containers tightly closed in a cool well ventilated place. Storage temperature 5 - 35 °C. The user is responsible for the observance of all required statutory provisions.

### Shelf life:

One year after delivery in unopened original packaging under the above-mentioned conditions.

### Packing:

Plastic containers á 30 kg net  
Plastic containers á 200 kg net  
Returnable Container á 600 kg net  
Returnable Container 1000 kg net