

SurTec® 432

Stainless Steel Pickling

Properties

- acidic liquid
- multi purpose immersion pickle
- treatment comprises a wide range of materials like austenitic chrome nickel steels and highly nickel iron alloys as well as stabilised steels
- cleansing pickling with an average erosion of ≤ 0.005 mm in 30 minutes
- by expansion of the pickling treatment, an erosion of approx. 0.025 mm can be achieved
- no danger of corrosion damages on account of a subsequent formation of pitting with austenitic steels
- well-balanced composition ensures that dissolved pickled material impurities in certain limits do not impair the further pickle bath operation

Application

The process SurTec 432 includes the following products:

- SurTec 432 Stainless Steel Pickling is the multi purpose immersion pickle
- SurTec 432 M1, SurTec 432 M2, SurTec 432 M3 Correction Solutions are dosed only on the recommendation of our service laboratory
- SurTec 432 A Pickling Additive supplements SurTec 432 optimally: it reduces both the formation of toxic nitrogen oxides (nitrite) and the effort involved in the effluent treatment of the rinsing water

make-up values:

SurTec 432	100 %
SurTec 432 A	according to the requirements

application time: 0.5 to 6 hours
(depending on the treated alloy)

temperature: 20-50 °C

tank material: polyethylene (PE)

heating: required, out of acid resistant material
(polyvinylidene fluoride (PVDF))

exhaust: required for worker's protection

hints: The temperature of the pickle can be raised to 50 °C for increase of the erosion rate. The following applies as a rule of thumb:
The erosion rate doubles with a temperature increase of 10 °C.
The metal surface to be pickled must be oil and fat-free in order to ensure a uniform perfusion.

Technical Specification

(at 20 °C)	Appearance	Density (g/ml)	pH-value (conc.)
SurTec 432	liquid, colourless-greenish	1.100 (1.08-1.12)	< 1
SurTec 432 A	liquid, colourless, clear	1.070 (1.05-1.09)	< 1
SurTec 432 M1	liquid, colourless, clear	1.060 (1.04-1.08)	-
SurTec 432 M2	liquid, colourless, clear	1.098 (1.07-1.12)	-
SurTec 432 M3	liquid, whitish, turbid	1.060 (1.04-1.08)	-

Maintenance and Analysis

Compensate drag-out losses by addition of SurTec 432. Should the pickling effect not be sufficient despite regular supplementation, our service laboratory is at your disposal. On account of analytical results, customer-specific regeneration concentrates can be formulated whenever necessary.

The following generally applies: The pickling activity is also a function of the metal content. In case of a metal content in the form of dissolved iron > 30 g/l, it is no longer possible to maintain the pickling effect despite regeneration.

With continuation of the pickling treatment and extension of the pickling time the risk of selective attack exists, in which the grain boundaries of the stainless steel are preferable attacked. In this case, an exchange of approx. 75 % of the bath volume through SurTec 432 or a stripping through an ion exchange system is necessary. The recovery rate amounts to approx. 75-80 % of reusable acid.

Ingredients

SurTec 432

- nitric acid
- hydrofluoric acid

SurTec 432 A

- sulfamic 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](#).

The following values can be taken as estimated average consumption:

SurTec 432	50-150 g per m ²
SurTec 432 A	according to the requirements

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

SurTec 432	1100 kg
SurTec 432 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 432	T - Toxic C - Corrosive	WHC 2
SurTec 432 A	Xi - Irritant	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>

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