



Antox[®]

Modern and high performance pickling products for stainless steel substrates

Chemetall
expect more⁺

Antox®

Pickling products maintaining the beauty of stainless steel surfaces



With Antox® we offer an extensive portfolio of pickling products for the surface treatment of stainless steels. The innovative and high performance chemical processes create a scale-free surface while at the same time improving the chemical resistance of the stainless steel substrates.

Nowadays, stainless steels can be found in all walks of life. Based on its elegant impression and high corrosion resistance, the substrate is increasingly being used for visible parts as facades, windows, doors, and in kitchens. However, these positive characteristics can lead to disappointment after a short time as soon as stainless steel is improperly handled or used in inappropriate places.

Protective passive layer

Beside the alloy composition and the microstructure, the corrosion resistance of stainless steels depends on the quality of the passive layer. The chrome oxide layer of only 2 to 4 nanometers forms spontaneously – provided that the chrome content of the material is higher than 12 %, the surface is metallically clean and there is enough oxygen for the reaction.



The passive layer ensures that there is no direct contact between the material and the surrounding medium, and therefore protects against corrosion. The protective passive layer may be damaged when the metal is processed by means of drilling, turning, milling, bending, welding or heat treatment. External influences such as chloride can also penetrate the passive layer.

Provided that the surface remains free from such disturbing influences, the passive layer forms spontaneously again. If this is not the case, progressive corrosion makes valuable facilities and equipment unusable within a short time.

Chemical processes keep surface structures unchanged

An intact and fully formed passive layer is necessary to ensure a high corrosion resistance. The Antox® technology ensures that surfaces of stainless steels are protected from disturbing influences such as temperature-related oxidation and discoloration, metal deposition and organic impurities – and this without changing the surface structure.

Antox® for metallically clean surfaces

To remove the individual contaminants from stainless steels in an ecologically and economically sound manner, it is of utmost importance to select the right product and to properly apply it. Chemetall offers a broad portfolio of acidic, neutral or alkaline degreasing and cleaning products, as well as pickling and passivation technologies.

The powerful Antox® stainless steel pickling products are free of hydrochloric acid and chlorides (< 50 ppm) and improve the resistance of stainless steel:

- ⊕ Simple removal of contaminants
- ⊕ Formation of a metallically clean surface
- ⊕ Supporting the formation of a new protective passive layer

Antox®

Pickling products for stainless steel surface treatment



Broad portfolio:

- ⊕ Cleaners
- ⊕ Pickling cleaners
- ⊕ Pickling paste
- ⊕ Neutralizing paste
- ⊕ Pickling and polishing paste
- ⊕ Spray pickling agent
- ⊕ Bath pickling agent
- ⊕ Passivating agents
- ⊕ Stainless steel surface care products
- ⊕ Equipment such as brushes, manual spray pickling devices, pickling pumps

Application areas:

- ⊕ Architectural applications such as facades, railings, windows, doors
- ⊕ Stainless steel tanks and piping for the pharmaceutical, agricultural, petrochemical and food industries
- ⊕ Kitchen equipment and kitchen utensils

Cleaning agent

Antox® 400

To clean and degrease any type of metal by hand, high pressure cleaning or by dip method. Mildly alkaline.

Contact time	5–10 minutes
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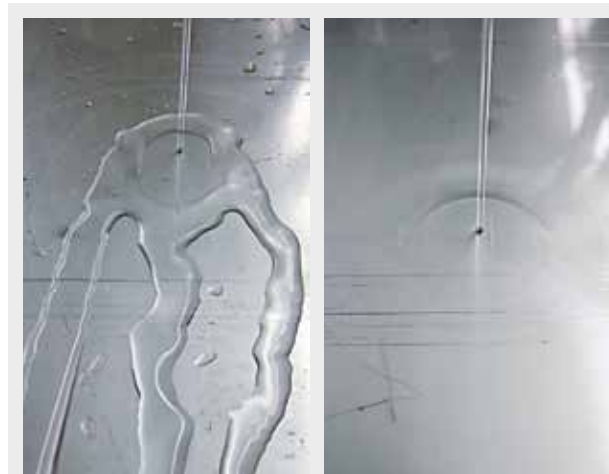
Yield	approx. 20 m ² /kg
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Antox® 118

To degrease any type of metal by hand or spraying. Slightly acidic.

Contact time	5–15 minutes
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Yield	approx. 20 m ² /kg
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Before:
oily, dirty surface

After treatment with Antox®:
clean and water-wetted surface

Pickling cleaner

Antox® 75 E

To remove rust spots, grease, oil and other contaminants, as well as to brighten the metal surface.

Contact time	20–30 minutes
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Yield	approx. 20 m ² /kg
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Antox® 76 E

To remove rust spots, grease, oil and other contaminants, as well as to brighten the metal surface. Slight pickling effect.

Contact time	20–30 minutes
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Yield	approx. 20 m ² /kg
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Treatment with Antox® of a rust spotted stainless steel surface

Effective pickling:
lower area already treated with Antox®, upper area untreated

Pickling paste

Antox® 71 E

To remove oxide scale and annealing colors in the areas of weld seams and heat affected zones.

Product appearance: colorless

Contact time	15–60 minutes
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Yield	80–150 running meters/kg
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Antox® 71 E Plus

Pickling paste with fast effect, also for high-alloy stainless steel. Product appearance: colorless

Contact time	15–60 minutes
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Yield	80–150 running meters/kg
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Antox® 71 E Extra

To remove oxide scale and annealing colors in the area of weld seams and heat affected zones. High acid content for intensive pickling effect. Product appearance: colorless

Contact time	15–60 minutes
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Yield	80–150 running meters/kg
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Antox® 21 E Plus

To remove oxide scale and annealing colors in the area of weld seams. Low nitric acid and low nitrate content.

Product appearance: green

Contact time	15–90 minutes
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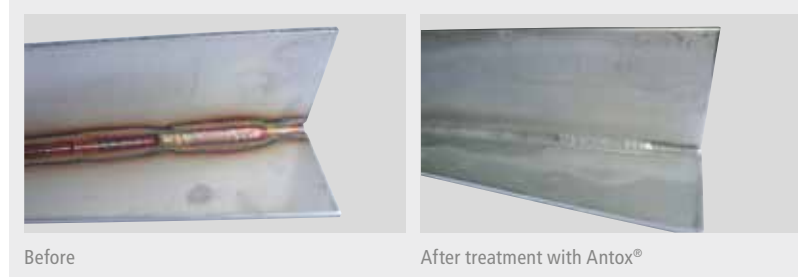
Yield	80–150 running meters/kg
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Antox® 3d

To remove oxide scale and annealing colors in the area of weld seams; especially for polished surfaces. Also suitable for aluminium substrates. Product appearance: colorless

Contact time	10–60 minutes
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Yield	80–150 running meters/kg
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Neutralizing paste

Antox® NP

To neutralize highly acidic stainless steel pickling pastes containing hydrofluoric acid.

Contact time	until formation of bubbles is finished
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Yield	80–150 running meters/kg
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Pickling paste

Antox® 2001 T

To remove oxide scale and annealing colors in the area of weld seams (only TIG seams); especially for polished surfaces. Cleaning of stainless steel equipment with heavy contamination or rust.

Contact time	Stainless steel: 1–10 minutes Stainless steel, polished: 1–3 minutes
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Yield	80–100 running meters/kg
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Before

After treatment with Antox®

Bath pickling agent

Antox® 80 E

Pickling of stainless steel components; dip method. Apply 1:1–1:3 with water.

Contact time	5–60 minutes
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Yield	approx. 4 m ² /kg
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Passivating agent

Antox® 90 E

Passivation of mechanically treated stainless steel surfaces and additional passivation after pickling of stainless steel surfaces. Apply 1:1 with deionized water.

Contact time	20–30 minutes
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Yield	approx. 20 m ² /kg
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Spray pickling agent

Antox® 73 E

To remove oxide scale and annealing colors and to pickle surfaces in one step.

Contact time 15–60 minutes

Yield 4–6 m²/kg

Antox® 73 E SG

To remove oxide scale and annealing colors and to pickle surfaces in one step. Uniform and even finish due to optimized acid content.

Product appearance: green.

Contact time 15–60 minutes

Yield 4–6 m²/kg

Antox® 73 E Plus

To remove oxide scale and annealing colors and to pickle surfaces in one step. Fast pickling, also for high-alloy stainless steel.

Contact time 15–60 minutes

Yield 4–6 m²/kg

Antox® 73 E Extra

To remove oxide scale and annealing colors and to pickle surfaces in one step. High acid content for intensive pickling effect.

Contact time 15–60 minutes

Yield 4–6 m²/kg

Antox® 23 E Plus

Pickling of weld seams and surfaces in one step. Low nitric acid and low nitrate content. Product appearance: green

Contact time 30–90 minutes

Yield 4–6 m²/kg



Before: tank with annealing colors



After treatment with Antox®: clean tank



Application of Antox® spray pickling agent



Green spray pickling agent applied to test panel



After treatment with Antox®

Stainless steel surface care

Antox® Surface Care 800 S

Cleaning and conditioning spray for polished surfaces. Silicone-free. 400 ml spray can.

Yield	100–150 m ² /spray can
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Antox® Surface Care

Cleaning and conditioning for polished surfaces. Contains silicone. 400 ml spray can.

Yield	100–150 m ² /spray can
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Easy to apply: spray, remove with a cloth – done.

Antox® equipment

Brush

Picture 1

Antox® brush (angled 3d), 2.5 cm

Antox® brush (angled), 5 cm

Antox® brush (straight), 5 cm

Picture 2

Antox® special brush blue/red

Antox® disposable brush

Antox® brush yellow, 12 mm



Pic. 1

Pic. 2

Hand-held sprayer

Picture 3

Antox® hand-held sprayer, 1.5 L

Picture 4

Antox® hand-held sprayer, 5 L



Pic. 3

Pic. 4

Pickling pump P1

Picture 5

Antox® pickling pump



Pic. 5

Competence in surface treatment

Global – pioneering – unique



As one of the leading global players, Chemetall is familiar with surface treatment in all its facets. Quality products and services are the prerequisite of our business success. However, at Chemetall, we know that it takes more than that to be a preferred global supplier.

The chemical treatment of metal surfaces is Chemetall's core competence. We base the focus of our worldwide activities on the development and implementation of customized technology and system solutions for surface treatment. The portfolio comprises technologies for cleaning, giving corrosion protection, sealing, improving paint adhesion, and facilitating the forming and treatment of metals.

Globally established technologies, for example Oxsilan®, Gardobond® and Ardrex®, are used in the most diverse market sectors from automotive to aerospace, from the appliance to architectural industries. Over many decades, Chemetall has been playing a leading role in shaping metal pretreatment.

In focus: value added for customers

Good products and quality services are the prerequisites for a successful business. However, at Chemetall we believe that true success lies in a close and partnership-based cooperation with customers. It is therefore our aim to offer a value added product with top quality processes, on-time deliveries and excellent technical service.



Chemetall Company Seat: Frankfurt am Main

Globally active, locally based

The global business activities of Chemetall are based on tradition and experience dating back all the way to the 19th century. Nowadays, Chemetall is one of the leading global players in surface treatment with headquarters in Frankfurt am Main, Germany. With 2,000 employees, 40 subsidiaries and 22 production sites, Chemetall is a financially strong and fast growing company with a long-term orientation, and we continue to aim high: we intend to strengthen our quality and innovation leadership even further. With sales and service teams, laboratories and warehouses at locations all around the world, we are operating in close proximity to our customers.

Sustainably successful

Responsible practices and sustainable development are key principles of Chemetall. Our first priority is to consistently implement environmental protection and work safety guidelines and to continuously improve the safety of our worldwide production sites. Chemetall acts responsibly with a view to society and the environment and puts them on an equal footing with its financial targets.

Reliable supplier of high-class pickling products

It is not easy to judge mechanically or chemically treated stainless steel surfaces. Often the quality becomes apparent several days, weeks or months later, after the facility or appliance has been put into operation. Then it is almost impossible, or only with high costs, to make up for an appropriate surface treatment. It is therefore important to know the exact requirements prior to choosing the suitable products.

For many years, the market has relied on our high performance Antox® pickling product range. Our portfolio corresponds perfectly to the different requirements of a modern and professional stainless steel treatment. The results of using our Antox® pickling technologies are always a long-lasting pure stainless steel surface and outstanding corrosion resistance.

Benefit from our comprehensive pickling portfolio as well as our long-standing experience in stainless steel treatment.

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