

# Chemical industry

Our services for maintaining  
your facilities.



## Surfaces in the chemical industry.

The production of chemical products poses special challenges for industrial plants. Enormous temperatures, high pressure and, in particular, aggressive materials attack the stainless steel surfaces. Corrosion protection is always a top issue in this regard, as is the optimum cleaning capacity of mixing tanks, tube systems and more.

The surface is also of great importance in production areas fitted with heat exchangers. A heat exchanger with deposit formation can no longer transmit energy as effectively as possible, which has an impact on energy costs over the medium term.

The optimum surface finish

For long-term plant operation, the surfaces should be free of production-related discolouration after welding and should not be able to form any production-related deposits. The characteristic passive layer of the stainless steel is formed only with undisturbed passive surface conditions. A pickling treatment after welding work is therefore always recommended.

## Electropolishing.

Electropolishing is a versatile surface treatment method. Electropolished surfaces have extensive functional properties:

- \* Reduced roughness (Ra)
- \* Micro-smooth
- \* Minimisation of the real surface
- \* Easy to clean
- \* Reduced film propensity
- \* Metallically pure and chemically passive
- \* Increased corrosion resistance

We electropolish tubes, fittings, containers, heat exchangers and more. Technical details are provided below:

- \* Tube lengths up to 18 metres (including U-tubes)
- \* Tanks up to 150 m<sup>3</sup> in volume
- \* Heat exchanger plates of any size
- \* Heat exchanger tube bundles
- \* Comprehensive processing documentation

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## On-site service.

In addition to the comprehensive in-house factory services, we can perform all services on site. We pickle and electro-polish your systems, tanks and components on site. This also ensures minimal downtime.

### Cleaning and passivation of new plants

- \* Deep cleaning for removal of installation-related impurities and residue in plants
- \* Passivation for corrosion-resistant surfaces

### Maintenance of existing plants

- \* Proper removal of corrosion phenomena (local corrosion such as pitting or surface corrosion)
- \* Repassivation of plants



HENKEL-Surfaces Assure Your Component's Value.

## Our Service Range.

- | On-site and factory service
- | Electrochemical polishing
- | Anodic cleaning
- | Chemical polishing / deburring
- | Chemical pickling and passivation
- | Professional cleaning (also in clean room)
- | Derouging and repassivation
- | Process and cleaning chemicals
- | Documentation
- | Construction



**HENKEL Beiz- und Elektropolieretechnik**

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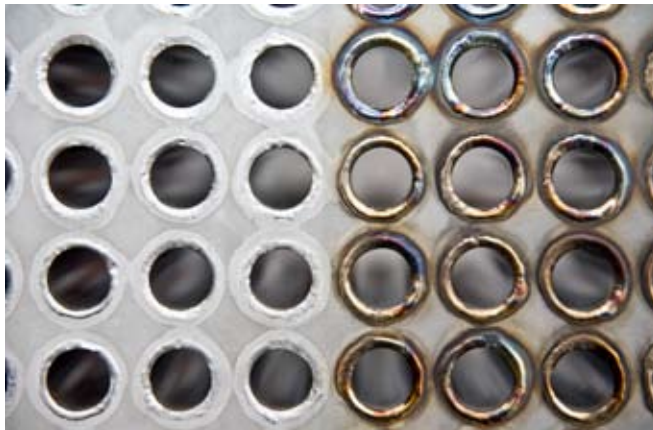


## Chemical pickling processes.

We can work on the components using traditional bath pickling as well as spray pickling or circular pickling. Small local welding seams are treated with pickling paste.

Pickling services overview:

- \* Machining of workpieces of any size (pickling baths up to 80,000 litres)
- \* Pickling chemicals manufactured in house for every application
- \* Complete processing documentation
- \* Delivery of pickling equipment, spraying equipment and accessories



Comparison of welding seams: pickled (left) and untreated (right); material 1.4301/304L

## Materials.

Every material has particular characteristics. The composition of the metallic alloy has a considerable effect on the further treatment of the surface. The HENKEL processes referred to above support the following materials:

*Stainless steels (1.4301/304L, 1.4435/1.4404/316L, 1.4539/904L, etc.), duplex steels (e.g. 1.4462), nickel and nickel alloys (alloy 59, Hastelloy®, Inconel®, etc.), aluminium, copper, niobium, titanium and titanium alloys (incl. nitinol), zirconium, tantalum, other materials on request.*

## Components.

There are next to no limits when it comes to chemical and electrochemical processing. In essence, the geometry of the component is decisive in terms of how it can be processed. Practical examples include:

*Tubes and tubing systems, fittings, special parts, heat exchanger tubes/plates, valves, pumps, circuit boards, storage tanks, mixing and batch tanks, cryostats, fermenters, agitators and fixtures, reactors, apparatus, plant systems and much more.*

## Your benefits.

- \* Over 40 years' experience in processing surfaces for the chemical industry
- \* A method tailored to your product
- \* Cost-efficient on-site processing is possible
- \* Component/surface inspection through extensive quality assurance
- \* Comprehensive processing documentation
- \* All-in-one supplementary services, including degreasing, anodic cleaning, final cleaning in the clean room, customer-specific labelling and packaging, etc.
- \* Adherence to delivery dates and order processing



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