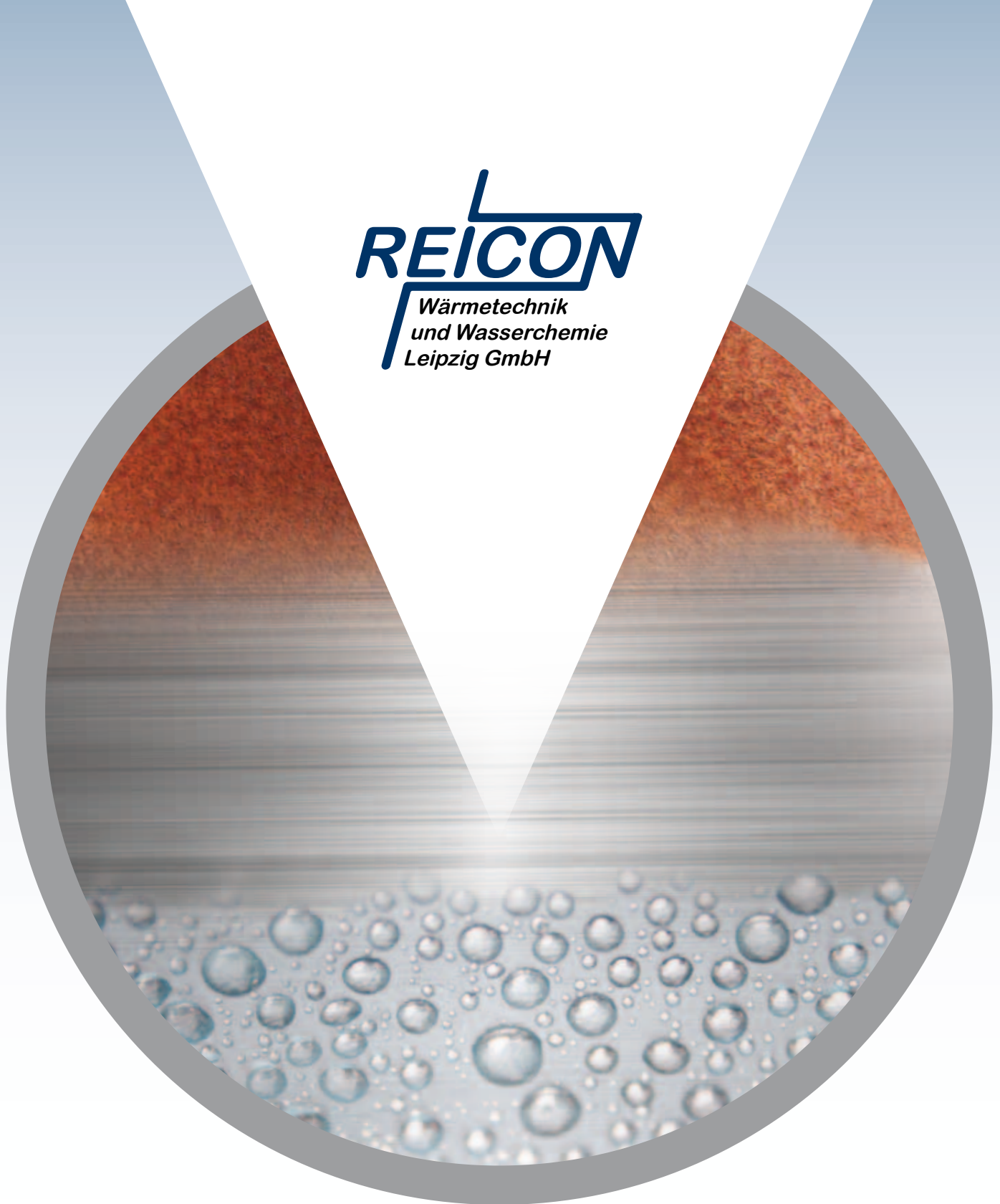
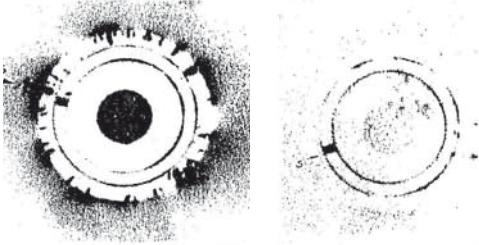


REICON
*Wärmetechnik
und Wasserchemie
Leipzig GmbH*



ODACON®

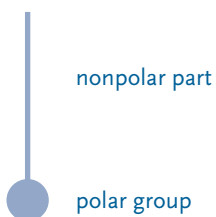
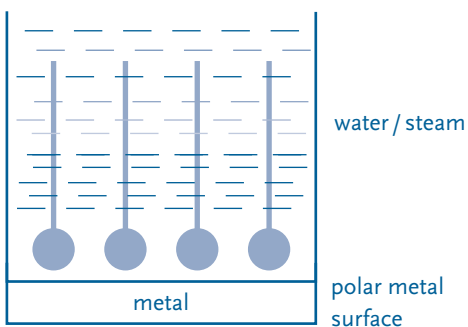
effective treatment of water and steam
cycles using amine technology



Autoradiogram strained austenitic ring samples
(Degree of black – Measure of the chloride enrichment)



Hydrophobic surfaces as a proof of successful preservation



Product features

ODACON® was developed especially for the water and water-steam cycles treatment.

The products are liquid emulsions of saturated alkyl amines having a chain length $> C_{15}$. The emulsions are produced without any additives, so that it is a pure product. For this reason, ODAICON® is also approved for the use in nuclear power plants.

Due to the steam volatility of the active agent, the entire system, including steam and condensate piping as well as steam users, is protected.

The direct contact ODAICON® containing steam is, according to the »Code of Federal Regulations, Title 21, Volume 3 and 4, Parts 170–299« in April 1997, approved for sterilization purposes of surgical instruments up to 2.4 mg/l, – and in the food and pharmaceutical industry up to 3 mg/l

Since ODAICON® contains no additions of phosphate, hydrazine, or similar products, it does not contribute to increased salinity of the boiler water.

The ODAICON® products are not dangerous as far as the current legislation is concerned. They are safe for indirect discharge through sewage treatment plants into receiving waters. The wastewater is minimally resolved, the excess can be filtered.

Effectiveness

The surface-active agent octadecylamine which is contained in the emulsion, acts in the phase boundaries pH value increasing, dispersing and reduces the interfacial tension of water.

Regardless of the quality and the properties of the medium (water, steam) a monomolecular protective layer is formed on the material surface, which is resistant to the ingredients normally present in water and steam circuits. Due to the formation of uniform potential levels, different materials are also protected against electro-chemical corrosion.

When decommissioning, the protective layer remains intact and forms a diffusion-resistant, hydrophobic surface.

During adsorption, chlorides or similar contaminants are displaced from the surface and from the columns.

The released ions are bound and can be removed with the blowdown water. The surface tension of water is reduced by adding ODAICON®.

Thus, the bubble diameter is reduced during the evaporation, and the frequency of bubbles will increase.

On the other hand, the diameter of the water droplets during the condensation process is reduced and as a result their flow behavior in the wet steam region is optimized.

In addition, the active agent accumulates, because of its surface activity at the phase boundaries and on the surface of the water droplets in the 2-phase region and increases the pH value directly at the component or droplet surface.

Advantages and Uses

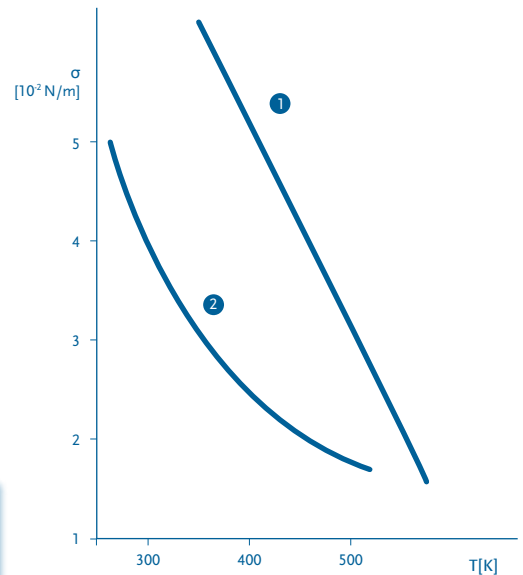
- › Improvement of the heat transfer and intensification of bubbles evaporation
- › Gentle removal of existing deposits and minimize the new formation
- › Protection of the entire water / steam systems against general and local corrosion (stress crack corrosion)
- › Reduction of erosion corrosion as well as droplet impact erosion
- › Preservation of equipment during operation
- › Protection against standstill corrosion, at filled, partly empty and emptied state
- › Economic and ecological because of minimal use of chemicals

Usage

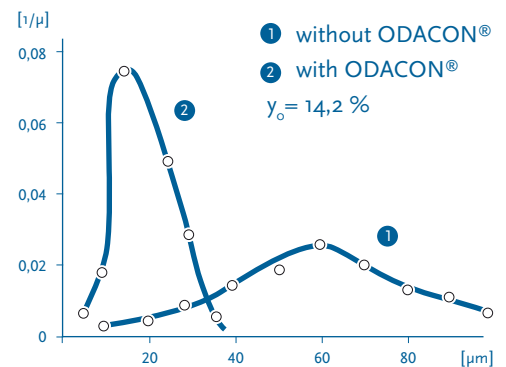
The required ODACON® concentration is dependent on the condition of the system and the mission aim.

The dosage can be done directly from the supply container using commercially available pumps.

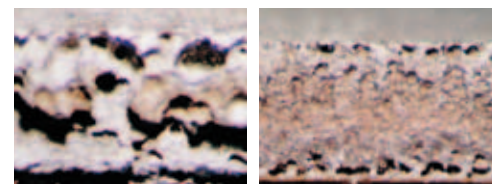
In the steam boilers, it is usually dosed into the feed water tank, where appropriate in the feed water pipe. A dosage directly into the steam is also possible. In hot and cold water systems as well as cooling circuits, the dosage is done in the lead after the heat exchanger or boiler.



Surface tension of pure water ① and ODACON® solution ②



Change of the droplet diameter when adding ODACON®



Without ODACON® With ODACON®
Stereo microscopic measurement (magnification 1:12) of material probes ST38

Scope of supply and service

	steam and hot water boilers	industrial cooling circuits	ingine cooling circuits
chemical cleaning	<p>chemical cleaning</p> <ul style="list-style-type: none"> > to remove iron oxide and carbonate layers <p>boiling and blow-out</p> <ul style="list-style-type: none"> > to reduce the initial contamination > effective corrosion protection up to commissioning 	<p>chemical cleaning</p> <ul style="list-style-type: none"> > to remove iron oxide and carbonate layers <p>disinfection</p> <ul style="list-style-type: none"> > to remove organic deposits 	<p>chemical cleaning</p> <ul style="list-style-type: none"> > to remove iron oxide and carbonate layers <p>disinfection</p> <ul style="list-style-type: none"> > to remove organic deposits <p>oil removal</p> <ul style="list-style-type: none"> > e.g. after leakage of heat exchanger
conditioning	<p>ODACON®</p> <ul style="list-style-type: none"> > protection of the complete water and steam system <p>online cleaning</p> <ul style="list-style-type: none"> > remove deposits during operation <p>service</p> <ul style="list-style-type: none"> > water analytics on site and in own laboratory 	<p>service</p> <ul style="list-style-type: none"> > water analytics on site and in own laboratory > control of biological contamination / legionella control <p>chemical treatment</p> <ul style="list-style-type: none"> > biocides, pH-value control, hardness stabilisation > cooling water with and without antifreeze components 	<p>service</p> <ul style="list-style-type: none"> > water analytics on site and in own laboratory > control of biological contamination / legionella control <p>chemical treatment</p> <ul style="list-style-type: none"> > biocides, pH-value control, hardness stabilisation > cooling water with and without antifreeze components
preservation	<ul style="list-style-type: none"> > before standstill periods > formation of a stable, hydrophobic protection layer > high protective effect in the filled and (partially) emptied state. <p>objective:</p> <ul style="list-style-type: none"> > no corrosion during standstill period > protection of steam generator and turbine during recommissioning 		

