



# Maintenance and basic cleaning for water treatment systems, water circuits and cleaning systems with deconex®

## Why basic cleaning and maintenance is needed

Water treatment systems, water cycles and cleaning systems are usually carried out 1 to 2 times a year. A thorough cleaning of water systems and circuits should also be performed in this cycle. Regular maintenance or thorough cleaning means, under production conditions, guaranteeing consistently achievable quality in the final result.

Even the best cleaning system can become useless if, for example, there are microorganisms in the rinsing water, which can be found as stains on the component surface after drying! With deconex® products and the appropriate cleaning process, this can be prevented.

Intermediate cleaning and rinse baths should also be included in this basic cleaning due to the constant build-up and growth of deposits of various residues (such as abrasion from metal and used cleaning chemicals that build up and crystallize).

From a technical point of view, it is not yet possible to completely prevent the penetration of microorganisms into water-bearing processes. For this reason, regular measures must be taken to remove deposits and discoloration and carry out disinfection.

As soon as the smallest particles such as dust, soilings, metal abrasions or cleaning chemicals are deposited in water-bearing areas, the growth of microorganisms begins.

Over time, this creates a foul-smelling, slimy film. This so-called biofilm essentially consists of organic components such as bacteria, algae, fungal spores, calcium deposits and dust, which then exponentially promote the growth of other microorganisms. If such a contaminated water treatment system is operated, the soilings will be transported to the cleaning system through the water cycle. In addition, deposits and strong germs can also be formed in the cleaning system itself, such as in the filled storage tanks, pipelines, filters or from standing moisture.

Inadequately maintained and poorly cleaned systems can become real "germ spinners" – and this is exactly where deconex® provides the solution!

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## An effective and environmentally friendly maintenance or basic cleaning with disinfection effect from Borer Chemie AG

During maintenance or basic cleaning with deconex® products, microorganisms are rendered harmless through oxidation and their structure is broken down. The deconex® products usually have a broad spectrum effect. Stubborn deposits as well as flash rust, calcifications, tarnishing and discoloration in the cleaning basin and tanks of the cleaning systems are also reliably removed.

Another advantage of the deconex® products used (e.g. compared to biocides) is that no resistances can develop and the deconex® products used behave biologically degradable and environmentally friendly in wastewater.

### Required deconex® products

- deconex® OP 153
- deconex® 44 PEROXYCLEAN or hydrogen peroxide 35% i g highly stabilized
- deconex® MT 30
  
- deconex® MT 41 kommt speziell zum Einsatz bei hartnäckigen Verfärbungen und Flugrost in Wannen und Tanks von Reinigungsanlagen. Nicht geeignet für Wasseraufbereitungsanlagen

### Occupational safety

When using deconex® products, observe the relevant safety data sheet.

Personal protective equipment must be worn when handling chemicals: Face/eye shield, chemical overall or apron, chemical-resistant gloves, closed protective shoes.

Further information regarding safety in the workplace, storage and disposal / waste water can be found on the safety data sheet for this product.

### Implementation of the basic cleaning process

To be carried out before basic cleaning:

1. Before starting with the basic cleaning process, allow all the systems and water circuits to be cleaned to cool down to 20-30 °C.

Then remove the filter, activated carbon and resin cartridges and, if necessary, include the water treatment system in this basic cleaning.

If the water treatment system is not to be included, create an appropriate bypass.

2. Determine the approximate volume of the systems, water circuits, oil separators, pipelines, etc. to be cleaned in order to be able to carry out the dosing accordingly.

3. Drain your cleaning system properly at 20-30 °C with the cleaning chemicals that are still present and rinse your systems (all tanks, pipes, etc.) with tap water.

### The basic cleaning

#### 1. Alkaline coarse cleaning and broadband disinfection:

Mix 1% deconex® OP 153 and 1% deconex® 44 PEROXYCLEAN in DI water or osmosis water and let this mixture circulate in the system to be cleaned. The maximum working temperature is 40 °C. The circulation time should be approx. 60-70 minutes.

#### 2. Rinsing:

Then rinse with tap water at room temperature. The circulation time should be carried out for about 15-20 minutes.

#### 3. Acid cleaning to remove inorganic buildups and neutralize alkaline residues:

Mix 0.2% deconex® MT 30 in DI water or osmosis water and let this mixture circulate in the system to be cleaned. The maximum working temperature is 40 °C. The exposure time / circulation should be operated until a pH value of 4-5 is reached in the circulation solution. The time required for this is normally around 30 minutes, but if this pH range cannot be reached after 30-40 minutes, deconex® MT 30 must be refilled.

**Variant 3a:** In the case of severe contamination of the cleaning system (basins, cleaning tanks) with tarnishing, incrustations or calcifications, flash rust or corrosion and also in the case of germs.

It can only be used for cleaning systems, not suitable for water treatment systems!

Mix 2% deconex® MT 41 in DI water or osmosis water and let this mixture circulate in the system to be cleaned. The maximum working temperature is 60 -70°C. The exposure time should be approx. 60-70 minutes.

#### 4. Rinsing:

Then carry out a circulation rinse with tap water at room temperature for approx. 15-20 minutes.

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### **5. Disinfection and fine cleaning:**

Mix 0.1% deconex® 44 PEROXYCLEAN in DI water or osmosis water and let this mixture circulate in the system to be cleaned. The maximum working temperature is 40°C. The exposure time should be approx. 60-70 minutes.

### **6. Final rinse:**

Finally, carry out a circulation rinse with DI water or osmosis water at room temperature until a pH value of 7 and the conductivity of the DI or osmosis water used is reached.

### **7. Remove any bypasses that may have been placed.**

### **8. Install new filters, activated carbon and resin cartridges in the systems.**

The basic cleaning process is now complete.

### **Notes on the disposal of used solutions**

The wastewater that results from the basic cleaning process can be directed directly to waste disposal.

Locally applicable waste water and disposal regulations must be complied with.

### **Liability disclaimer**

This proposed method should be understood as a recommendation based on the current level of knowledge and state of the technological art. The method must be supplemented by the user's own tests.

Any liability for the method chosen lies with the user. No warranty, guarantee or liability claims against Borer Chemie AG will be entertained!

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