

ADDITIVES - a real plus

Ensuring perfect dairy products is the speciality of Horpovel® GmbH. As an expert in the manufacture of cleaning and disinfecting products for the dairy industry, its focus lies on professional membrane cleaning. For the cleaning of membrane filtration plants, the company relies on cooperation with the membrane manufacturer Koch Separation Solutions and various other plant manufacturers.

In the field of cleaning chemicals, a balance is always being struck between the use of raw materials (with the support of additives where necessary) and ready-made cleaning chemicals.

The proponents of ready-made cleaning chemicals repeatedly point out that their process is cheaper. The managing director of Horpovel® GmbH, Michael Poeten, opposes this: „Approx. 20% lower dosage quantities and up to 50% lower chemical costs are not utopian values with our process using additives. Even in the field of filtration systems, the use of raw materials can optimise costs and cleaning results“.

Advantages and disadvantages of the different cleaning methods

A main argument for the use of ready-made cleaning chemicals usually is the reduction of effective concentrations. The question is to what extent that statement is justified?

The majority of ready-made cleaning chemicals are alkaline mixtures of caustic soda (with potash lye if necessary), complexing agents and polymers with and without surfactants. These ingredients are usually used to prevent stone (lime deposits) and to improve the absorption of dirt particles in the working solution. For this reason, the necessary quantitative alkalinity for effective, alkaline cleaning can only be reduced by these additives to a very small extent. If there is a significant reduction in the total alkalinity of the cleaning solution, the question is whether similar concentrations would have been sufficient when using pure raw materials. Here it is proven that often propagated reductions of the working concentrations of the pure alkalinity cause that plants are not cleaned in certain areas.

„We therefore always recommend the



implementation of a cleaning verification, which we carry out on the basis of persulfate technology. This way we can determine whether organic deposits are still present in the plants after cleaning,“ says Martin Patzelt, head of application technology.

This verification revealed that residual organic matter was still detectable in the plant sections after CIP optimisation using pre-packaged cleaners. By supplementing the cleaning with raw materials in the alkaline and acidic range and, if necessary, additives, significantly better results could be achieved.

When using ready-made detergents, the dosage had to be so increased to achieve a comparable result so that the same amount of total alkalinity or total acidity was reached in the working solution. This resulted in an average additional consumption of up to approx. 20%. The comparison of raw materials with and without additives to ready-made deter-

gents proves the convincing advantages of the Horpovel® approach:

- The costs of cleaning agents are reduced.
- Logistics costs are reduced, as caustic soda/ nitric acid is available in most plants.
- By reducing the transport effort, the environment is less strained and CO₂ pollution is lowered.
- The use of additives makes it possible to use products that are unstable in ready-made products. Hence, difficult cleaning processes can be better affected. For example, it is possible to use defoamers that are effective even at much lower concentrations.
- Where the use of raw materials and additives is possible, a reduction of the rinsing quantities of CIP can be expected by reducing the amount of surfactants in the cleaning solution. This in turn has a positive effect on waste water in most cases.



Membrane system cleaning with KOCHKLEEN® products*

In addition to the adaptations for cleaning tanks, pipelines, separators, etc., the use of raw materials as a supplement is also possible in membrane systems. „The support of alkaline cleaning steps, e.g. by adding the raw material caustic soda lye, is a useful means of achieving high pH values without risking an overdose of complexing agents and surfactants,“ explains Martin Patzelt.

In the field of membrane systems, the rinsing of the complexing agents and surfactants often poses just as great a challenge as the removal of the actual contamination in the system. A decoupling, e.g. of the alkalinity for controlling the pH values during cleaning and the targeted use of the cleaning surfactants provides an optimal solution.

The condition for the use of raw materials always is the technical situation of the plant.

SARS-CoV-2 has shown it works: service without personal contact

Regardless of the intensive, personal customer care provided by the specialists in the field, Horpovel® has drawn conclusions from the current pandemic. In each case, an individual assessment is made as to whether personal contact is necessary and if so, under what conditions it can take place.

In order to be able to continue to provide safe and successful cleaning support, Horpovel® GmbH invested in remote monitoring of the cleaning process.

Clients can choose from five options:

1. **Horpovel® Online:** Through access to a server platform in Germany, documents can be exchanged securely and easily with clients.
2. **Horpovel® Campus:** The e-learning platform enables other companies to call up specific learning content (e.g. on hazardous substances and hygiene) for their employees. In addition, the Campus area offers training courses on membrane cleaning and cleaning verification.
3. **Horpovel® Live-View:** This online tool makes it possible to follow what the operator sees on his visualisation during cleaning in real time, even without personal presence.

4. **Horpovel® Analysis-Pipe:** With the Analysis - Pipe the company is able to document the essential factors of cleaning and to make a statement regarding possible optimisation. In addition, the rinsing and circulation steps can be tracked and evaluated during plant cleaning in order to later define basic conditions under which these steps precisely can be optimised.
5. **Horpovel® data logger:** The data logger enables Horpovel® to permanently monitor essential factors of your cleaning, to create reports and generate automatic error messages in case of deviations. The data logger can be operated on- and off-line - adjusted to the respective client requirements.

*KOCHKLEEN® is a registered trademark of Koch Separation Solutions, Inc. in the United States and may be registered in other jurisdictions.

Company information Horpovel® GmbH

Horpovel® is an owner-managed company with tradition and future. We have specialised in the production of cleaning products since 1960. Today a large number of specialists in the field of application technology and our own fleet of vehicles ensure the hygienic enjoyment of food. We maintain close cooperation with plant manufacturers and have access to a Europe-wide network. Comprehensive advice, efficient solutions, responsible action - for us these are the essential components of successful business relations.

Our specialty?

Flawless dairy products. Therefore, in cooperation with Koch Separation Solutions, the production of effective products for cleaning and disinfection as well as individual cleaning process planning is required.

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