



Case Study for the Dairy Industry: CIP with NADES



Analysed enterprise

Our customer is a German dairy milk filling plant with a processing capacity of ca. 290.000 litres of milk per day.

Our customer utilizes one of the most modern filling devices for milk in Germany.

The core business is the filling of ESL-milk in Elopac liquid food packaging devices.

The existing CIP-System is based on a central CIP solution, servicing the filler, pasteurizer and tanks.

The advantages at a glance!

- Significant improvement of the microbiology in the area of fresh-and rinse water
- time advantage, generated through savings of steps in the CIP process
- reduction of fresh water volume consumption
- shortening of the cleaning process
→ increase in the production time window
- possible substitute of expensive combined solution
- possible savings in energy

The NADES Effect

1. Reliable hygiene
2. Cost savings
3. Time savings
4. Resources savings

more information:
www.nades.info



Initial situation and scope of tasks

The centralized CIP-system serving the filler, pasteurizer and tanks is supplied with city mains water. This water, used for the application in the plant, is occasionally microbiologically unsuitable. As a result, problems of recontamination in the rinsing water occurred in the filling device. The daily maximum water consumption is on average 210m³.

Integration of NADES in the CIP-Process

The inoculation of NADES occurs before the fresh water collecting tanks of the CIP-system.

Project phase 1: a 0,5% NADES solution was dosed into the rinsing water. Project phase 2 was initiated after the successful conversion.

Project phase 2: NADES (2% concentrate) replaced the conventional disinfectant solution of paracetic acid.

Scope of tasks

1. The fresh water in the CIP-system collecting tank remains consistently without finding (acc. Drinking Water Ordinance)
2. Shortening of CIP processes through savings in CIP-system steps
3. The rinsing water is the point of drainage after a proper cleaning of objects (tanks) is free from Pseudomonaden and *Enterobacteriaceae* counts
4. Significant reduction of microbiological findings in the area of CIP
5. Savings of expensive disinfectant solutions and their logistics and transport

Technical Data DS-Device

DS-Device: DS1,5 (aquagroup AG)
 Concentration: 2% NADES solution
 Type of pump: Circulation Pump
 NADES-Tank: 2.000 litre
 Brine-Tank: 200 litre

Overview of the adapted CIP System:

Before NADES	With NADES
alkaline cleaner	alkaline cleaner
rinse with fresh water	rinse with NADES (2%)
acidic cleaner for mineral deposits (when needed)	acidic cleaner for mineral deposits (when needed)
rinse with fresh water	rinse with NADES (2%)
disinfection with paracetic acid or 82°C hot water	
rinse with fresh water	

Savings of two cleaning steps through the optimization of the CIP-system with NADES.

Microbiologically verified

More than 100 individual samples were taken and quantitatively and qualitatively analysed over a time period of 12 months. In 97% of the samples after enrichment, there was no *Enterobacteriaceae* determinable.

Fresh water results	Percent without findings (post enrichment)
before NADES	71%
with NADES	98%

Rinsing water results	Percent without findings (post enrichment)
before NADES	<i>Actual data regarding the preliminary rinsing water situation was not made available due to the condition of the water</i>
with NADES	97%

Microbiology

1. An microbiological improvement of at least 27 % in the fresh water for rinsing purposes
2. 97% of the rinsing water without findings (percent without findings after enrichment)