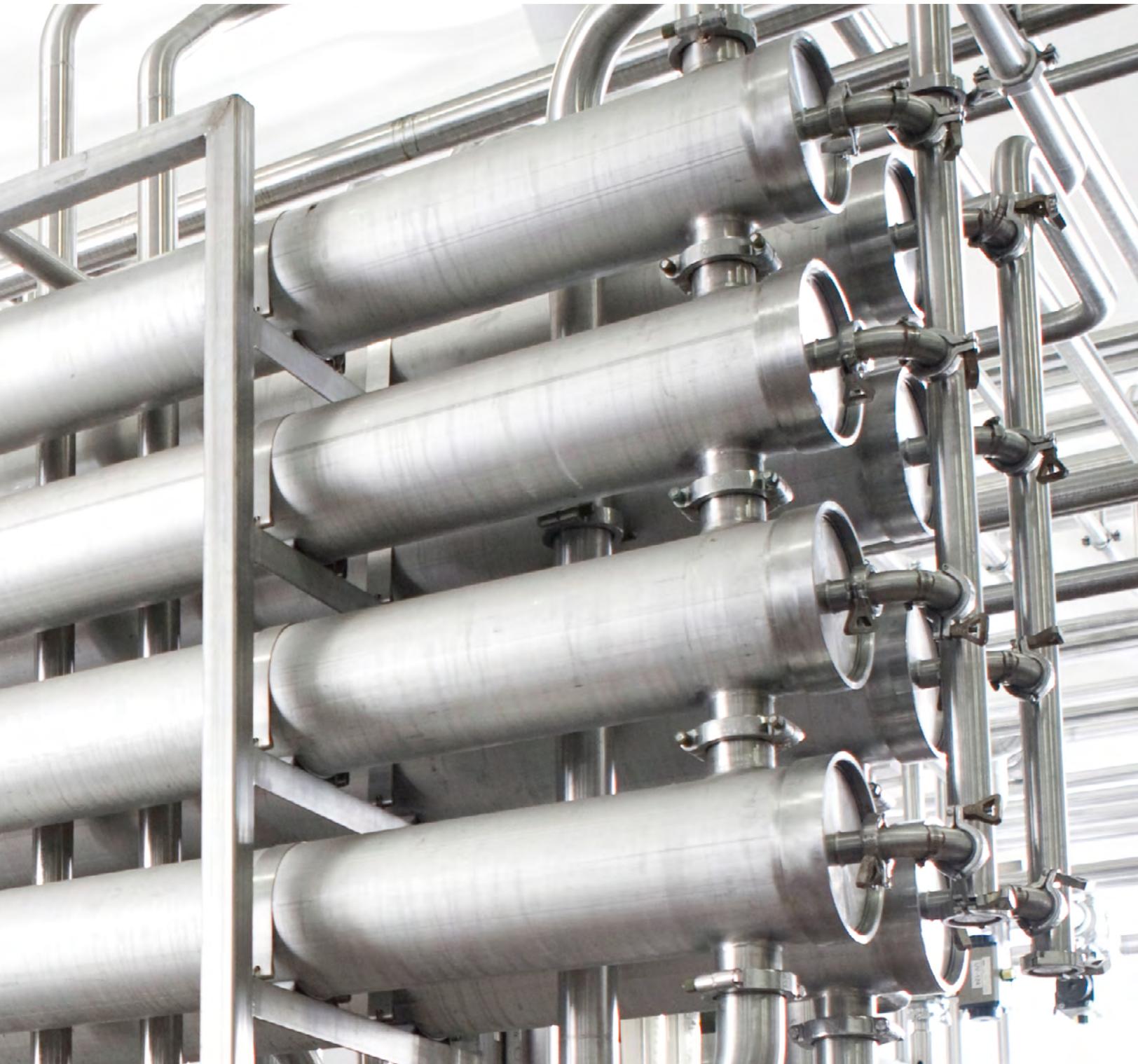


DeLaval One Step Alkali **Reduces cleaning times while saving** **water and utility costs**





Innovations in Sanitation

One Step Alkali is specifically designed to improve your cleaning efficiencies by combining the alkaline detergent and acid cycles in one complementary step

As part of DeLaval Cleaning Solutions' product line of cycle time reduction cleaners, One-Step Alkali was developed to replace the conventional acid wash step by offering the convenience of single cycle cleaning thereby increasing the functionality of your in-plant cleaning system(s).

Incorporating One-Step Alkali in your cleaning regimen will also result in increased time for production and/or preventative maintenance.

One-Step Alkali reduces the need for an acid wash step by utilizing powerful surfactants to prevent mineral film deposition through chelation and free rinsing. This frees up cleaning time along with gaining additional water and utility savings. Results show that One-Step Alkali provided excellent results alone in comparison with conventional caustic based cleaners combined with an acid step when cleaning hot process.

By eliminating an additional wash step, your food processing plant's time, water and chemical use are minimized. And, cleaning capacity is maximized in a new and totally different fashion.

Traditional Cleaning Programs include four key cycles:

- Pre-rinse
- Alkaline wash
- Acid wash
- Free Rinse Sanitize cycle

How One-Step Alkali Works

One-Step Alkali is an entirely new approach to cleaning food processing operations. Utilizing a combination of high performance caustic based builders designed to clean and control scale on hot processing equipment in a single cleaning cycle. DeLaval chemists have combined the detergent cycle and the acid cycle into one, saving time in your cleaning process that can lead to a multitude of benefits for you.

The purpose of any detergent is to adhere, break up, lift and remove soils from the surfaces being cleaned.

One-Step Alkali is no different in theory. However, it incorporates a combination of chemical components in a unique way to facilitate enhanced cleaning performance.

One-Step Alkali characteristics include

- Wetting –the ability to reduce surface tension, thereby maximizing detergent contact with tough organic soils left
- Emulsification / dispersion – holding liquids and solids in suspension for efficient removal from surfaces during the rinse phase
- Solubilization – Holding insoluble liquids in solution for efficient removal from surfaces during the rinse phase

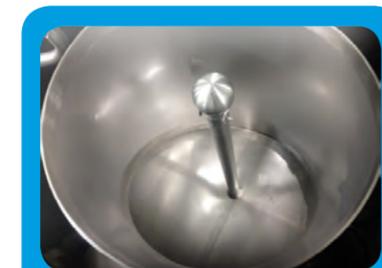
Sustainability Program

One-Step Alkali is one component of DeLaval Cleaning Solutions' Sustainability Program. This program is designed to increase efficiency and improve your cleaning and sanitation programs.

We tailor sanitation programs, products and services to your plant's specific requirements.



Before OSAIk



After OSAIk

Summary	Current	Proposed	\$avings
Product costs (\$/yr)	\$9,105	\$24,274	\$(15,168)
Heating costs (\$/yr)	\$99,940	\$59,250	\$40,690
Water costs (\$/yr)	\$2,184	\$1,560	\$624
Labor costs	\$9,221.33	\$4,229.33	\$4,992
Total	\$120,450	\$89,313	\$31,137
Cleaning hours per year	576.3	264.3	312
Cost per system/yr	\$120,450	\$89,313	\$31,137

Greater than 25% Savings!*

*These are hypothetical examples intended only to demonstrate potential savings from using One Step Alkali Cleaner instead of traditional chlorine-based, two-cycle cleaners. Your results and actual savings may differ. Savings will depend on a variety of factors, including product costs; heating, water and labor costs; training of personnel; and cleaning protocols. Nothing herein is intended as a guarantee of savings or warranty of performance.



Four Pillars of Sustainability

- ✓ Innovative Technologies leading to greater production efficiencies
- ✓ Helping to secure & maintain profitable business now, and into the future
- ✓ Provide products that have minimal environmental impact on the ecosystem
- ✓ Sanitation programs to ensure production of quality food products that meet consumer demands

