



# GEA CIP RECOVERY UNIT

With membrane filtration, it is now possible to recover more than 90 percent of a spent caustic solution by using pH-resistant nanofiltration (NF) membranes. Benefits include reduced operating costs and better performance.

# RECOVERING 90% OF CAUSTIC SOLUTION

NaOH

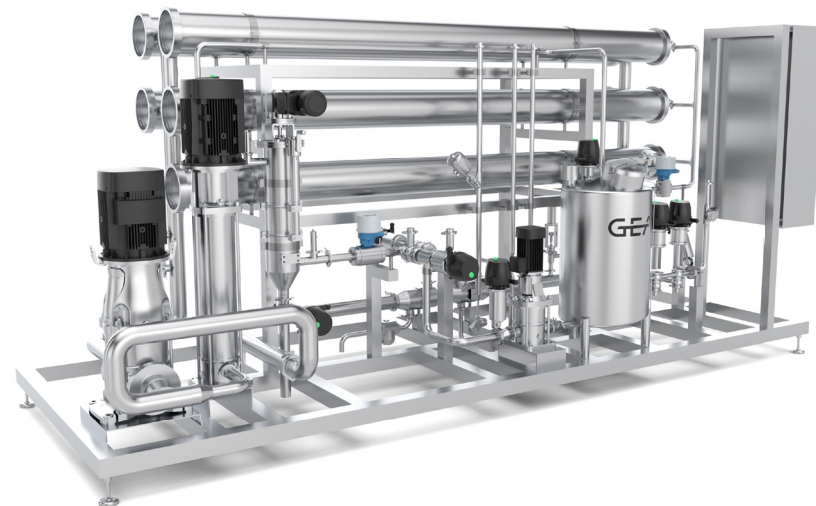


## With increasing volume, treatment also becomes more expensive.

As lowering our overall environmental impact becomes increasingly important, there is growing pressure on industry to reduce the amount of process wastewater that's discharged to sewers. Having to treat higher volumes of this wastewater can, however, be expensive.

Most industries have already reduced their water consumption to a minimum. However, even with the implementation of efficient clean-in-place (CIP) systems and the ability to recycle detergents a number of times, large volumes of caustic wastewater are often generated. With repeated use, cleaning solutions — which mainly consist of a 2–4 percent sodium hydroxide solution — become loaded with impurities, such as proteins, sugars and colorants, and must subsequently be changed. However, using a nanofiltration (NF) plant from GEA, these solutions can be cleaned and regenerated for continued use, thereby saving money and avoiding disposal issues.

The regeneration of these CIP solutions is achieved using membrane filtration at the normal operating temperature of the fluid (up to 80°C). The contaminated CIP solution is fed into the main storage tank via a bypass system and subjected to automatic self-cleaning filter. This removes suspended colloidal impurities.



Often, CIP solutions can be directly treated in a nanofiltration (NF) system to remove color and low-molecular weight impurities. This concentrates the impurities in the retentate, thereby allowing the purified caustic solution permeate to pass through at the same concentration and temperature as the feed.

## Benefits and advantages

- Reduced chemical loss saves money and extends application intervals
- Lower cost to neutralize wastewater
- Reduced energy costs owing to high-temperature filtration
- Plug & Play design for easy implementation into existing CIP systems
- Standardized modular design to reduce investment costs and improve your return on investment.
- Short payback time
- Fully automated system



# GEA SERVICE - FOR YOUR CONTINUED SUCCESS.

Working with GEA Service means partnering with a dedicated team of service experts.

Our focus is to build, maintain, and improve customer performance throughout the entire life cycle of the plant and its equipment.

## **Beginning of Life Services**

Getting you started with seamless support for instant productivity and performance.

## **Lifetime Services**

Keeping it running with the cost-efficient

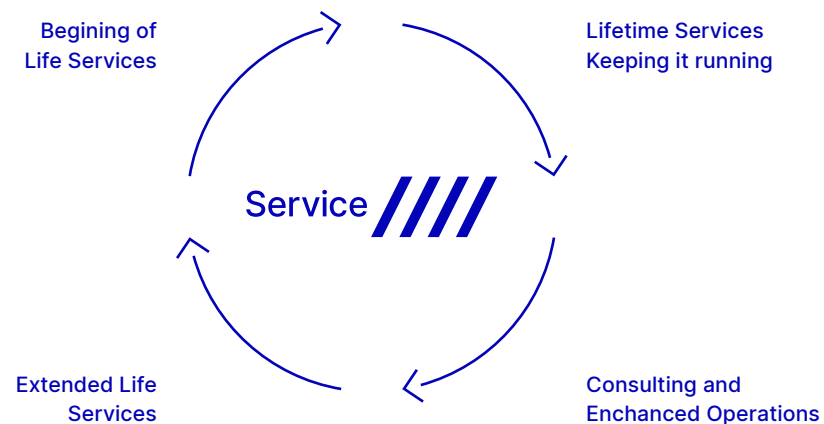
way of ensuring safety and reliability.

## **Extended Life Services**

Constantly improving by sharing our knowledge to safeguard your investment

## **Consulting & Enhanced Operations**

Together with you by enduring commitment to you and your business.



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