

Concentrating Protein? Cut CIP Costs in Half

How many steps in a “four-step” membrane CIP?

Seems like a silly question. Or a riddle. But when the flushing steps are counted, **typical membrane cleaning programs become 11 steps or more.**

That's a lot of water and wastewater to treat.

Fouling-Immune Technology

ZwitterCo developed a breakthrough membrane technology **immune to irreversible fouling from fats, oils, grease, and proteins** based on the extreme hydrophilicity of zwitterions. This has been proven by our first commercial installation, an industrial bioprocessing protein concentration **in operation for nearly 2.5 years.**

Following the early success of our first superfiltration (SF) membrane, ZwitterCo is now implementing this technology across a range of membrane types, from RO to UF, an design **sanitary products specific for food, dairy, and beverage processes** that enable a daily **1-step clean** plus sanitization.

Sustainability...At Lower Cost

A simple drop-in replacement will **cut cleaning costs by >50%** by reducing chemicals, make-up water, wastewater, and energy. Additionally, **chlorine is not required** to restore membrane performance!

By switching to ZwitterCo membranes and simplifying CIP programs, protein concentration systems can **save over \$1,200 per year** per 8038 membrane element. And RO polishers can save over \$700 per year per 8038 or 8040 element.

Conventional Membrane Cleaning

Water Flush

Alkaline Wash

Water Flush

Enzyme Wash

Water Flush

Acid Wash

Water Flush

Alkaline Wash

Water Flush

Sanitization

Water Flush

 ZWITTERCO

Simplified Cleaning with
Zwitterionic Membranes

Water Flush

Alkaline Wash

Water Flush

Sanitization

Water Flush

Save >50% on CIP
by switching to
ZwitterCo membranes

ZwitterCo can help you reduce:

- CIP chemicals
- Make-up water
- Wastewater generated
- Energy
- Cleaning time
- Chlorine usage

Fast Facts:

- Easy drop-in replacement
- No CAPEX
- No system modifications
- Patented, zwitterionic chemistry

The Most Cleanable Membrane

Modeled Economic Savings

With a faster and simpler cleaning program, ZwitterCo membranes enable savings of **over \$1,200 per element per year**. Your savings will vary depending on system size, tank and hold-up volumes, flush volume, and water, wastewater treatment, and chemical costs.

Use ZwitterCo's economic savings tools to model the potential savings in your systems.

Cleaning Program	Conventional UF Elements	ZWITTERCO Elements
Alkaline + Surfactant + Chlorine Wash	✓	✓ (Warm caustic only)
Enzyme Wash	✓	✗
Acid Wash	✓	✗
Alkaline + Surfactant + Chlorine Wash	✓	✗
Sanitization	✓	✓
CIP Operational Costs		
Total Chemical Cost (\$/day)	\$498.79	\$146.48
Total Water Cost (\$/day)	\$187.35	\$93.69
Total Wastewater Treatment Cost (\$/day)	\$998.48	\$437.11
Total CIP Cost (\$/day)	\$1,684.62	\$677.28
Total CIP Cost (\$/year)	\$613,203	\$246,529
Net Savings in CIP Costs (\$/year)		\$366,674 Total (\$1,309 per 8" Spiral)

Benefits of ZwitterCo Membranes



Sustainability

Meet and exceed your sustainability goals with decreased chemical usage.



Cost Savings

Reduction in chemical, wastewater, and energy costs lead to overall cost savings.



Operational Efficiency

Spend less time cleaning and more time running your process operations.



No CAPEX Required

No system modifications needed. ZwitterCo drop-in replacements are fast and easy.

Lowest total cost of ownership

Ready to see for yourself? Start qualification testing today!

Talk with a ZwitterCo Technical Expert

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