



“

*Our process would
not be profitable
or possible without
ZwitterCo membranes.*

- Dr. Konrad Miller, VP, Manufacturing,
Science, & Technology, Solugen

The Impact of ZwitterCo Membranes at Solugen

Dive into the details to see how we contributed to **400% savings** in just 9 months at a Houston bioprocessing facility and learn about the transformative impact of ZwitterCo's solutions.



Solugen, a cutting-edge manufacturer of bio-based chemicals, has transformed the industry with its groundbreaking chemi-enzymatic processes. By employing water-based chemical production, Solugen deviates from conventional petrochemical methods that depend on metal catalysts and solvents.

Determined to achieve zero liquid discharge through water reuse and recycling, Solugen's Houston facility turned to ZwitterCo, an advanced membrane technology company, whose innovative membrane technology provided an unparalleled solution to Solugen's complex challenges.



“

*We made a quick call to the ZwitterCo team and started up some discovery talks to figure out if they had a solution for our application, and it turned out that the **ZwitterCo membranes** were made **perfectly** for what we do.*

- Abe Gerardo, Associate Director,
Process Development, Solugen

The Challenge

Solugen's unique water-based process relies on the need to retain and preserve enzymes from water and other impurities. Before joining forces with ZwitterCo, Solugen was primarily using hollow fiber membranes that rapidly fouled, leading to frequent replacements and increased operational costs. This unsustainable approach created a challenge that threatened Solugen's innovative business model, creating a need for a **more efficient and reliable solution** to maintain their commitment to sustainable chemical production.

ZwitterCo Membranes

ZwitterCo, a leader in advanced membrane technology, uses a unique zwitterionic copolymer chemistry. Their membranes are exceptionally hydrophilic, allowing them to attract water into their pores and effectively reject proteins and organic matter.

The ZwitterCo Solution

Faced with the challenge of finding a sustainable replacement for their hollow fiber membranes that fouled quickly, Solugen turned to ZwitterCo for a solution that would transform their approach to water treatment and enzyme preservation.

“

*Installation is very simple. It really is just **plug and play**.*

- Sarah Tutt, Senior Process Engineer, Solugen

Conventional membranes often require hours of aggressive chemical cleaning that negatively impact membrane performance. ZwitterCo membranes, on the other hand, are **immune to irreversible organic fouling**, and their performance may be fully recovered with a mild cleaning. These innovative features make ZwitterCo membranes the perfect solution for bioprocessing streams that quickly foul other traditional membranes.

The Results

ZwitterCo's technology brought about **several key improvements** in Solugen's processes such as:

Enhanced Efficiency



After implementing ZwitterCo membranes, Solugen **improved cycle times by over 100%**, ensuring consistent performance and boosting productivity.

Reduced Maintenance



ZwitterCo membranes maintain performance for *years*. This significantly reduced element replacements, with Solugen estimating over **400% savings in just nine months**.

Streamlined Cleaning



Zwitterionic technology allows **95-100% restoration of original membrane performance** with a simple warm water flush, caustic wash, and rinse, reducing downtime and harsh chemical use.

Seamless Integration



Installing ZwitterCo membranes was straightforward and seamless, allowing Solugen to **quickly integrate** them and **reap the benefits** of the new technology right away.

The partnership between Solugen and ZwitterCo showcases how collaboration and innovation can solve complex industrial challenges. ZwitterCo's advanced membrane technology has transformed Solugen's operational efficiency, reduced costs, and ensured sustainability in chemical production. **This collaboration continues to benefit both companies, significantly impacting sustainability and efficiency in the industry.**





About ZwitterCo

ZwitterCo's membranes solve the most complex separation challenges, providing industries with the tools for advanced wastewater treatment and water reuse. The company leverages zwitterions' remarkable organic fouling-immune technology to build membranes that enable years of operating life in hard-to-treat streams that would ruin conventional membranes in hours. ZwitterCo's products are used in digestates, leachates, and various food & beverage wastewaters. The company has been recognized as Breakthrough Technology Company of the Year at the Global Water Summit and by the Department of Energy and the National Science Foundation as a leader in clean water technologies.

Talk with the ZwitterCo Team

ZwitterCo
12 Cabot Rd, Suite B
Woburn, MA 01801

Contact Us
zwitterco.com
sales@zwitterco.com