

# Causti-COR<sup>®</sup> System

Temperature and pH Tolerant Spiral Nanofiltration



 **KOVALUS**  
Separation Solutions™

# Membrane Technology Designed Specifically for Caustic Recovery

## Over 50 Years of Membrane Experience

KOVALUS SEPARATION SOLUTIONS™ (KSS) is a global leader in membrane filtration technologies with over 50 years of membrane experience and thousands of system installations worldwide. We have applied our experience and expertise to develop our new Causti-COR® systems, designed specifically to recover, purify and reuse caustic from food, beverage and industrial applications. These systems lower spending on caustic, reduce energy consumption, and are environmentally friendly to help your company comply with increasing stringent regulatory requirements.

## Causti-COR Systems

The KSS Causti-COR Nanofiltration Membrane Systems offer a cost effective, environmentally friendly way to recover the expensive caustic solutions used to clean process equipment. Causti-COR systems utilize our patented SelRO® membranes to recover up to 95% of caustic for reuse by removing low molecular weight organic and inorganic contaminants.

## Benefits of recycling caustic

- Less spending on caustic and acid materials
- Reduction in effluent volume
- Reduced waste treatment costs
- Lower energy consumption

## SelRO Membrane

The SelRO® family of spiral wound elements utilize a proprietary membrane developed by KSS using a highly crosslinked polymeric chemistry. They demonstrate long membrane life while treating acids and bases with temperatures up to 160°F (70°C), and concentrations including:

- Sodium and potassium hydroxide (up to 20%)
- Sulfuric, nitric, hydrochloric, hydrofluoric and phosphoric acids or acid blends, up to 35%
- pH levels from 0-14

## Estimated Annual Savings\*

Feed Flow	50 gpm (11.5 m <sup>3</sup> /hr)
Caustic Concentration	3%
Process Temperature	160°F (70°C)
Caustic Savings	2 thousand tons/year (1800 MT/yr)
Acid Savings	2 thousand tons/year (1800 MT/yr)
Heat Savings	16 billion BTU/year (17,000 GJ/yr)
Water Savings	23 million gallons/year (88,000 m <sup>3</sup> /yr)

\* Average payback less than 12 months

## Common Recovery Applications

- Pulp and paper
- Textile manufacturing
- Purification and mercerization
- Pharmaceutical
- Equipment cleaning
- Food processing
- Spent regeneration streams of resin columns and ion exchange operation
- Dairy, Food and Beverage
- Oil industry

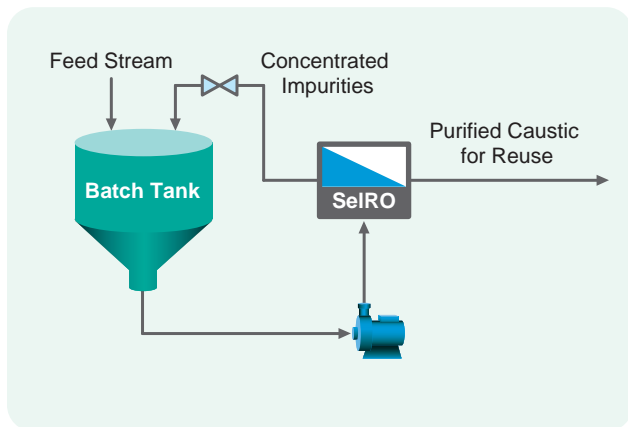
# Standard System Designs

## Caustic Systems

The Causti-COR<sup>®</sup> system family offers six models, including 3 small, simple to operate batch systems for small and medium flow rates between 1 and 15 m<sup>3</sup>/hr (10,000 – 100,000 GPD) and 3 larger, continuously operated systems for medium and large feed flow rates between 4 and 32 m<sup>3</sup>/hr (25,000 – 200,000 GPD). Larger flow rates can be treated using custom-engineered systems.

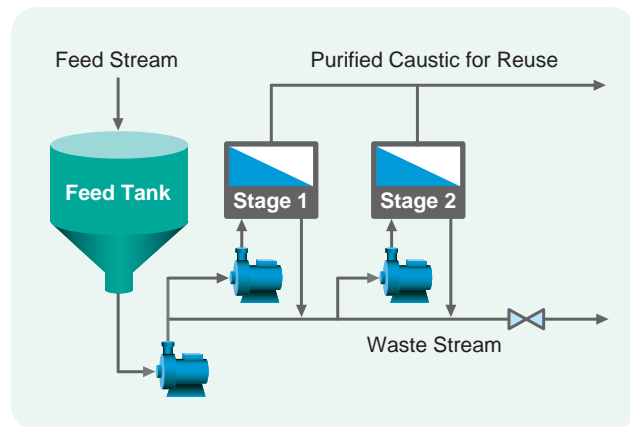
Models	Causti-COR 1	Causti-COR 2	Causti-COR 3	Causti-COR 4	Causti-COR 5	Causti-COR 6
Operating Mode	Batch			Continuous		
Feed Low Range	6k-25k GPD (1-4 m <sup>3</sup> /hr)	13k-50k GPD (2-8 m <sup>3</sup> /hr)	25k-100k GPD (4-16 m <sup>3</sup> /hr)	25k-100k GPD (4-16 m <sup>3</sup> /hr)	37k-150k GPD (6-24 m <sup>3</sup> /hr)	50k-200k GPD (8-32 m <sup>3</sup> /hr)
Number of SeIRO 8 inch elements (Max)	5	10	20	20	30	40
Automation	Largely Manual			Automatic		

### Batch



The Causti-COR system treat the contents of a batch tank. Purified caustic solution leaves the system, while concentrated impurities return to the feed tank for reprocessing. When the desired product recovery is achieved, the batch tank is drained and refilled with fresh feed.

### Continuous



In this mode of operation, feed is directly pumped into a baseline pipe and recirculated through two stages of membranes. Clean permeate is produced at a steady flow rate and quality, while the process parameters are automatically controlled.





## KOVALUS SEPARATION SOLUTIONS

KOVALUS SEPARATION SOLUTIONS™ (KSS) is a global leader in separation technologies.

With best-in-class domain expertise, technologies and systems, KSS is uniquely positioned to help customers purify and recover valuable process streams and achieve sustainability goals across food and beverage, life science, and general industrial markets.

### Services & Support

After-Sales Services & Maintenance Programs • SepTrac™ Smart System



[www.kovalus.com](http://www.kovalus.com) • [getinfo@kss-sep.com](mailto:getinfo@kss-sep.com)

 **KOVALUS**  
Separation Solutions™

For complete contact information and listing of our global locations, visit [www.kovalus.com](http://www.kovalus.com)  
©2023 KOVALUS SEPARATION SOLUTIONS, LLC. All rights reserved worldwide.  
For related patent and trademark information, visit [www.kovalus.com/legal](http://www.kovalus.com/legal). 10/23