

Causti-COR[®] Systems

How Much Is Your Caustic **Really** Costing You?

Advanced Membrane Filtration for Caustic Recovery



Filtration for a Better Future[®]...

Membrane Technology Designed Specifically for Caustic Recovery

Over 50 Years of Membrane Experience

Koch membrane systems (KMS) is a global leader in membrane filtration technologies with over 50 years of membrane experience and 20,000 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 KMS 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 KMS 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 m³/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 m³/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

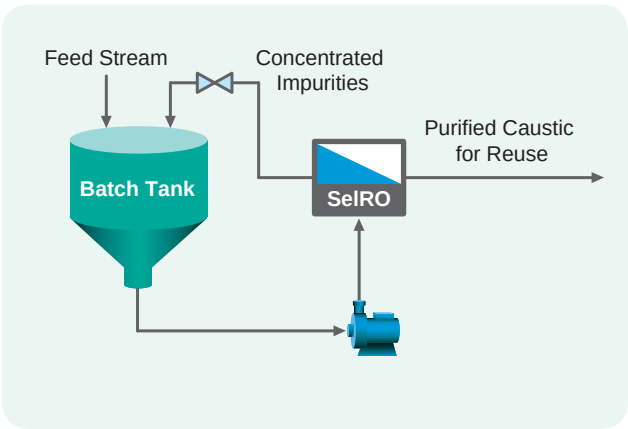
Standard System Designs

Caustic Systems

The Causti-COR[®] system family offers six models, including 3 small, simple to operate batch systems for small and medium flow rates between 1 and 15 m³/hr (10,000 – 100,000 GPD) and 3 larger, continuously operated systems for medium and large feed flow rates between 4 and 32 m³/hr (25,000 – 200,000 GPD). Larger flow rates can be treated using custom-engineered systems.

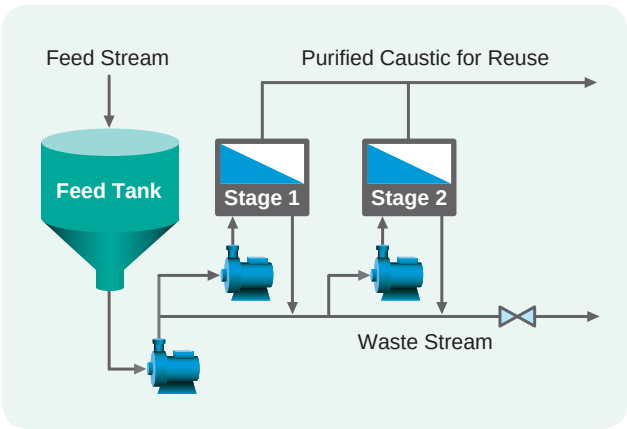
Models	Causti-COR 1	Causti-COR 2	Causti-COR 3	Causti-COR 4	Causti-COR 5	Causti-COR 6
Operating Mode	Batch			Continuous		
Feed Low Range	6k-25k GPD (1-4 m ³ /hr)	13k-50k GPD (2-8 m ³ /hr)	25k-100k GPD (4-16 m ³ /hr)	25k-100k GPD (4-16 m ³ /hr)	37k-150k GPD (6-24 m ³ /hr)	50k-200k GPD (8-32 m ³ /hr)
Number of SelRO 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.

KMS Assist®

KMS will partner with you throughout the life cycle of your membrane filtration system. Our experienced technical team will provide global service and support and will work directly with you to maximize process efficiency. KMS ASSIST, our service and maintenance program, provides the tools to keep your system operation at the highest level, including:

- Membrane Process Optimization
- Plant Audits
- Data Collection, Analysis & Reporting
- Operator Training
- Telephone Support



Koch Membrane Systems, Inc.

850 Main Street, Wilmington, MA 01887-3388

Main: +1-978-694-7000 • Fax: +1-978-657-5208 • Toll Free: +1-888-677-5624

For complete contact information and listing of our global locations, visit www.kochmembrane.com

©2017 Koch Membrane Systems, Inc. All rights reserved worldwide. For related patent and trademark information, visit www.kochmembrane.com/legal.

Koch Membrane Systems, Inc. is a Koch Chemical Technology Group, LLC company. 8/17