

**ADVANCED
MEMBRANE
TECHNOLOGIES**

**Product
Catalog**



Take a big
step forward
in reverse
osmosis

As a global leader in direct water treatment, Buckman brings you a full line of leading-edge chemistries and advanced technologies that can optimize your water treatment program and improve significantly your membrane filtration. Not only will we help you solve your problems, but also identify and capitalize on new opportunities, enabling you to simultaneously take care of the environment and your bottom line.

Take a big step forward with us. For over 70 years, we have provided industries all over the world with the leadership and support that they have needed to get ahead. Let us do the same for you.

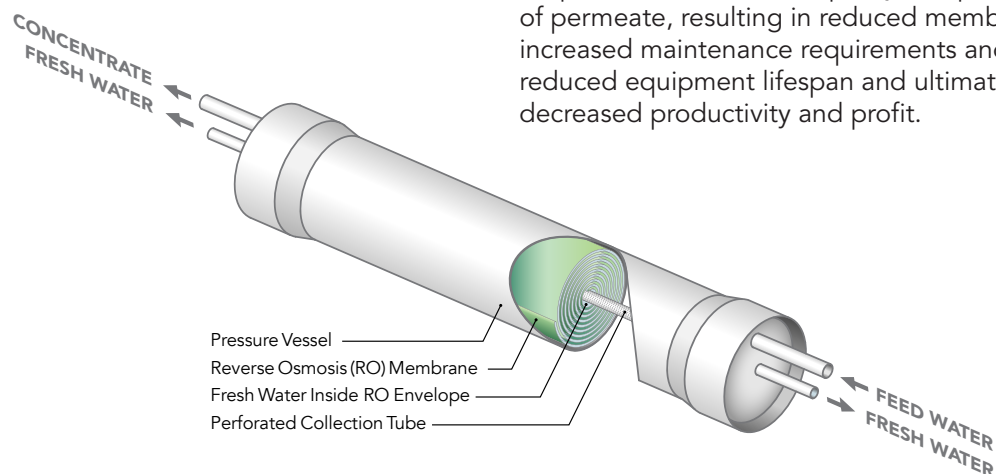


Membrane Filtration: Reverse Osmosis

There is a growing need for companies to focus on increasing environmental sustainability while at the same time growing profit. Membrane filtration technology is part of the solution to this challenge. By replacing the unsustainable and hazardous treatments of the past, membrane systems can help to make permeate purer and wastewater cleaner, while reducing your environmental footprint.

How does Reverse Osmosis work? Put simply, a Reverse Osmosis (RO) system cleanses water of contaminants by forcing it through a semi-permeable membrane, which allows passage of the water while blocking most of the contaminants.

Reverse Osmosis—the challenge. A common challenge of the Reverse Osmosis system is fouling of the membrane surface. This can cause pressure drop and undermine the quality and production of permeate, resulting in reduced membrane life, increased maintenance requirements and costs, reduced equipment lifespan and ultimately decreased productivity and profit.



Key chemistries. Advanced protection. Our solution.

Buckman offers you a range of innovative membrane system chemistries formulated to control the dissolved and suspended solids, organics, colloidal matter and microorganisms that build up on the membrane surface and lead to increased pressure drop and reduced permeate production and quality. Our products, along with our expertise, can help you to protect costly equipment, conserve water and energy,

increase the longevity of membrane elements and increase operational efficiency throughout the plant.

Buckman products are cost-effective solutions, formulated to be used on both thin-film composite and cellulose-acetate membranes. Wherever applicable, our products comply with drinking water treatment chemicals standards.

Scale control

Run cleaner, longer

Look to Buckman for proprietary blends of phosphonates and polymer chemistries that are optimized to inhibit and disperse the specific scaling minerals that can affect your system adversely.

Advantages of scale control usage

- Higher membrane rate of recovery.
- High performance at low dosages.
- Prevention of carbonate, phosphate and sulfate based scales.
- Stabilization of iron, manganese and other metal ions.
- Prevention of problems due to silica polymerization.
- Dispersion of metal oxides, colloidal silicate and aluminum silicate.
- Modification of crystal structure of precipitants.
- Reduction in acid consumption.

SCALE CONTROL	
Product Application & Features	Product
Concentrated inhibitor of calcium fluoride, calcium sulphate and calcium carbonate scale control.	Bulab® 7014
Concentrated product for calcium carbonate scale and iron hydroxide dissolution.	Bulab® 8802
Dispersant of silica, magnesium silicate and calcium phosphate dispersion.	Bulab® 8808
Concentrated dispersant of iron deposits and calcium phosphate and silt dispersant.	Bulab® 8810, Bulab® 8843
High-performance calcium sulphate scale inhibitor.	Bulab® 8813
Inhibitor of calcium carbonate, calcium sulphate and barium sulphate scale.	Bulab® 8841
Economical low to moderate performance calcium carbonate and calcium sulphate scale inhibitor.	Bulab® 8842

Our membrane solutions will ensure your sustainability by:

- ✓ Reducing operating costs.
- ✓ Providing consistent and repeatable quality standards.
- ✓ Reducing environmental impact.
- ✓ Improving financial sustainability.
- ✓ Improving operating efficiencies.
- ✓ Increasing equipment availability and life extension.

Membrane cleaners

Increase performance and reduce downtime

Buckman applications include acidic and alkaline formulations designed to remove inorganic and organic foulants. The result is improved performance, longer element life and reduced operational costs.

Advantages of membrane cleaners

- Extended RO membrane life.
- Reduction in cleaning time.
- Removal of stubborn foulants from membrane surfaces.
- Efficient removal of carbonate, phosphate and sulfate scales.
- Dissolution of iron and manganese oxide, manganese hydroxide and sulfide deposits.

MEMBRANE CLEANERS	
Product Application & Features	Product
Acidic synergistic blend for the dispersion and dissolution of inorganic contaminants including iron deposits.	Bulab® 8882
All organic acidic chelant surfactant blend for the removal of organics and iron bearing foulants.	Bulab® 8887
For pH adjustment of CIP solutions or for pH control of the feed, when specified.	Bulab® 8888, Bulab® 8895
Concentrated acidic cleaner of iron deposits.	Bulab® 8896
Alkaline cleaner for removing biological and organic foulants.	Bulab® 8879, Bulab® 8891
Alkaline chelant polymer blend for the dispersion of inorganic particles, microbiological matter and organic foulants.	Bulab® 8884
Alkaline cleaner for the removal of calcium, iron and copper deposits.	Bulab® 8891

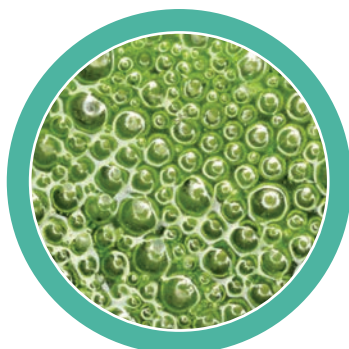
Microbicides

Don't let slime, bacteria and algae foul your bottom line

A recognized leader in microbiological research and control, Buckman provides high-performance oxidizing and non-oxidizing biocides to control microorganisms in your system.

Advantages of microbicides

- Reduced energy and water usage.
- Penetration and dispersion of biological slime.
- Removal of heavy organic foulants, cationic polymers and hydrocarbons.



MICROBICIDES	
Product Application & Features	Product
Excellent for biofilm control. Suitable for use on CA membranes under controlled conditions.	Bulab® 8100
A rapid kill broad spectrum biocide with a relatively short half-life and reduced environmental impact once deactivated at elevated pH.	Bulab® 8861
A broad spectrum microbicide, effective over a broad pH range.	Bulab® 8862, Bulab® 8867
Dosed with Bulab® 6044 to generate hypobromous acid; Effective microbicide at higher pH levels; Reduced chlorine handling; More environmentally acceptable than chlorine.	Bulab® 6041
Deactivator of chlorine and other biocides.	Bulab® 8852
Applied alone or in conjunction with either Bulab® 6041 or Bulab® 8100; May be deactivated with Bulab® 8852.	Bulab® 8868

Specialized tools, superior performance

You can't stay ahead of the fouling that disrupts membrane performance unless you can actually anticipate it. Buckman's predictive modeling does just that. Our breakthrough technology, including Buckman EZe Monitor®, Buckman OnSite® programs and online microbiological monitoring techniques,

can improve system performance, prevent costly overtreatment and eliminate time spent cleaning undertreated systems. These programs allow for real time monitoring, control and documentation of your systems and treatment programs.

Buckman EZe Monitor®

Water treatment control made easy

Buckman EZe Monitor is a comprehensive online plant-wide system that accurately tracks all water quality parameters—pH, ORP, corrosion rate, and conductivity—as well as chemical treatment levels.

It automatically adjusts the feed of treatment chemical accordingly. In addition, the system makes all information easily accessible for review, so that operators can stay in control of their operation and their budget.

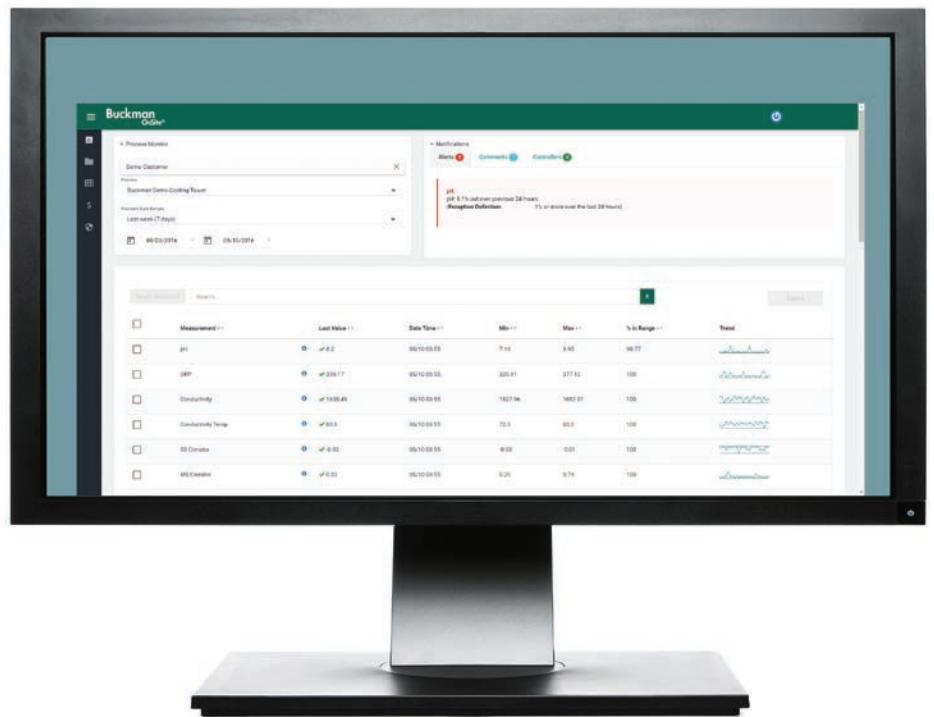
Buckman OnSite®

A breakthrough in information management

Buckman OnSite is an online portal and data dashboard that gives you and your Buckman service representative the power to monitor operations like never before. Customers can use this innovative system to access vital, timely intelligence, such as automated controller data, manually entered information, and material safety data sheets. Buckman representatives can use it to efficiently manage documents and quickly create comprehensive reports for

our customers, complete with graphic interpretations. With the insight that Buckman OnSite provides, you can more easily track your own success and the value that Buckman brings.

The Buckman OnSite dashboard interface provides quick access to continuous reporting and valuable insight into the customer's internal processes.



Buckman Green Toolbox

Everything you need to boost sustainability

The Buckman Green Toolbox enables our service personnel to quickly and accurately assess your current situation and simulate future scenarios. That way, we can maximize water recoveries and energy consumption and design an effective treatment based on water chemistry and operational conditions.

With the Green Toolbox, we can:

- Predict problematic species and identify the areas that they threaten.
- Identify re-use streams and align your system with your water use strategy.
- Optimize operational conditions.
- Gain insight into your value streams, taking all stakeholders into consideration.
- Increase your profitability and minimize your environmental footprint.



Technical expertise & on-site support

At Buckman, we continue to develop close relationships with original equipment manufacturers to assure you of the best chemistries and services available for your system. Buckman's experienced technical sales associates will focus on the factors that drive profitability and sustainability in your plant and provide innovative approaches to maximize your return on investment and minimize your environmental impact.

Look to Buckman for:

- Water chemistry modeling and prediction.
- State of the art testing and application equipment.
- Troubleshooting and membrane autopsies.
- Water balance and simulating cascading fit for use streams.
- Close cooperation with Original Equipment Manufacturers to assure you of the best chemistries and services for your systems.

It's not just about RO; it's about ROI and ROE.

Everything we do at Buckman is designed to bring you greater return on investment and a higher return on environment. This means controlling not only the fouling but the costs; as well as protecting critical natural resources.

Why not find out more? Speak with a Buckman representative or visit [buckman.com](https://www.buckman.com). Together, we can reverse the problems you're having in your Reverse Osmosis system, and get your plant moving toward greater efficiency and profitability.



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Seller warrants that this product conforms to its chemical description and is reasonably fit for the purpose referred to in the directions for use when used in accordance with the directions under normal conditions. Buyer assumes the risk of any use contrary to such directions. Seller makes no other warranty or representation of any kind, express or implied, concerning the product, including **NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS OF THE GOODS FOR ANY OTHER PARTICULAR PURPOSE**. No such warranties shall be implied by law and no agent of seller is authorized to alter this warranty in any way except in writing with a specific reference to this warranty. W955H (05/18)

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