



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.

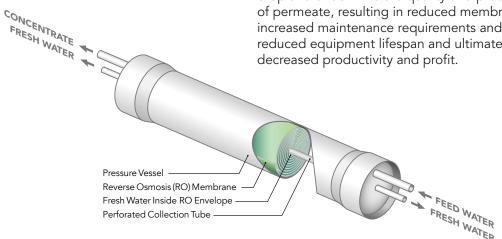


### Membrane Filtration: Reverse Osmosis

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
Economical low to moderate performance calcium carbonate and calcium sulphate scale inhibitor.	Bulab® 8805
Concentrated dispersant of iron deposits and calcium phosphate and silt dispersant.	Bulab® 8807
Dispersant of silica, magnesium silicate and calcium phosphate dispersion.	Bulab® 8808
Inhibitor of calcium carbonate, calcium sulphate and barium sulphate scale.	Bulab® 8809
High-performance calcium carbonate and calcium sulphate scale inhibitior.	Bulab® 8818



## 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
Alkaline cleaner for the removal of organic foulants,silica and iron deposits.	Bulab® 8856
Alkaline chelant polymer blend for the dispersion of inorganic particles, microbiological matter and organic foulants.	Bulab® 8884
Concentrated acidic cleaner of iron and copper deposits.	Bulab® 8893

## 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
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
Deactivator of chlorine and other biocides.	Bulab® 8871

# 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. 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.

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