



The Lifeline for the Nitrogen Processing Industry

NALCO  **Water**
An Ecolab Company



NALCO WATER

ADDRESSING INDUSTRY WATER CHALLENGES.

WATER MANAGEMENT

- ✓ Total Plant Assessment
- ✓ Scenario Planning
- ✓ Regular On-Site Technical Service & Support

Innovative solutions to fit your water sustainability goals and minimize water risk

Deliver more than just products

Meet water specifications for unit operations

Continue delivery of high-quality results



PRE-TREATMENT

TROUBLESHOOTING AT THE SOURCE.

RECOMMENDED PRODUCTS AND SERVICES

- ✓ PARETO™ Mixing Technology
- ✓ Raw Water Biocontrol
- ✓ Ion Exchange and Membrane Services

Prevent scale buildup and corrosion

Improve water clarity

Minimize downtime and chemical consumption

Increase potential to use alternative water sources



PROCESS

PROTECT YOUR MOST CRITICAL ASSETS.

RECOMMENDED PRODUCTS AND SERVICES

- ✓ OMNI™ Total Heat Exchanger Performance Monitoring
- ✓ NITROsolve™ UAN Corrosion Inhibitors
- ✓ 3D TRASAR™ for UAN Quality
- ✓ Nitrogen Analyzer

Reduce turnaround time

Repurpose water-energy sources to minimize energy costs and optimize performance

Reduce downtime

Predict and avoid downtime with proactive monitoring and control

Deliver consistent product quality

Enhance performance across your operation.

Keep your plant reliable and profitable with outcome-based solutions and products designed for every aspect of your operation. From pre-treatment to process to post-treatment, Nalco Water helps protect your business with quantified results.

HEAT EXCHANGE & COOLING WATER

PRE-TREATMENT



PROCESS

STEAM

POST-TREATMENT

WHAT KEEPS YOU UP AT NIGHT?

From extended turnaround times to maintenance costs, performance impacts all aspects of your business. Several factors can threaten your unit operations through your plant.

WHAT'S IMPORTANT

- Safety
- Reliability & Extended Turnaround
- Asset Protection & Optimization
- Total Cost of Operations & Profitability
- Regulatory & Environmental Compliance

Water program customized to fit your needs

Complete on-site water quality tests

Technical water analysis at Nalco Water labs as needed

Full review of water impact on your business

The right program for your business

Water quality specification met for each unit operation

High-quality chemical products

Regular maintenance program

More than just products

Local on-site expertise

Meeting evolving states of conditions

Addressing future regulatory concerns

Continued delivery of high-quality results

Over 100 years of deep industry knowledge

Monitoring and control of critical systems

Continued water analysis



HEAT EXCHANGE AND COOLING WATER

DELIVERING CONSISTENT PERFORMANCE IMPROVEMENT.

Predict challenges, prevent outages and prolong operations

Reduce energy consumption with clean cooling tower surfaces

Reduce water use within single unit operation

Meet operational temperature specification to meet product and discharge requirements

Enable water reuse for utility and process streams

RECOMMENDED PRODUCTS AND SERVICES

- ✓ 3D TRASAR Technology for Cooling Water
- ✓ High Performance Cooling Water Polymers
- ✓ OMNI Total Heat Exchanger Performance
- ✓ Water Safety Solutions
- ✓ PURATE™ Technology



STEAM

MAINTAIN RELIABILITY.

Keep boiler surfaces free of scale

Avoid unnecessary costly repairs and total asset replacement

Increase reliability and uptime

Reduce energy consumption

Reduce cleaning maintenance and service calls

Improve pre-boiler condensate corrosion control

RECOMMENDED PRODUCTS AND SERVICES

- ✓ 3D TRASAR Technology for Boilers
- ✓ Ion Exchange and Membrane Services
- ✓ 3D TRASAR Technology for Membranes
- ✓ Nalco Water Corrosion Scale Monitor (NCSM)



POST-TREATMENT

IMPROVE RESULTS.

Meet regulatory discharge compliance

Reduce maintenance costs

Enable water recycle capability

RECOMMENDED PRODUCTS AND SERVICES

- ✓ Microbiological Testing
- ✓ PURATE Technology
- ✓ Nalco Water Flocculant Technologies
- ✓ FLOCMaster™ Dewatering Technology

Minimize scale

LEADING THE NITROGEN MARKET BY DELIVERING CUSTOMER VALUE*



PRODUCTIVITY

Help maintain **98% uptime** and assure extended turnaround times



COSTS

Reduce overall total cost of operation up to **20%**



ASSETS

Partner in **5** Greenfield projects to help protect assets worth over **\$5B**



ENERGY

Help provide steam availability and optimize energy use in **40%** of plants



PRODUCT
QUALITY

Troubleshoot challenges in asset protection and product quality in more than **50%** of UAN producing plants



SAFETY

Help eliminate safety incidents with reliable and efficient chemical delivery systems, safety audits and operator safety training



WATER

Treat more than **78 billion** gallons of water to an optimized quality and quantity necessary to meet production needs and community expectations

The standard of innovation

Nalco Water's unmatched service is paired with innovative products designed to deliver exceptional plant performance. As part of our holistic approach, expert service specialists will help you choose the solution best suited to protect your assets, extend turnaround time and reduce variability with your systems.



PURATE™ CHLORINE DIOXIDE SYSTEM



INNOVATIVE CHEMISTRY

unique stabilized solution of sodium chlorate and hydrogen peroxide

UNIQUE DESIGN

high efficiency generator is a two-chemical feed system that can be easily piped at application point

COST EFFECTIVE

effective treatment program in wide range of pH and various constituents in system

ENGINEERED FOR RELIABLE AND EFFICIENT OPERATION

>95% generation efficiency with design safety interlocks

REDUCED CORROSION POTENTIAL

Does not contribute potentially corrosive chlorides like traditional halogen treatments

OMNI TOTAL HEAT EXCHANGER PERFORMANCE MONITORING

ADVANCED MONITORING AND PREDICTABILITY FOR RELIABILITY AND PROFITABILITY

A first-of-its-kind program guaranteed to maximize operational efficiency and improve your business outcomes – sustainably



PREDICT

Performance is predicted by using cloud analytics in partnership with Microsoft

PREVENT

Generate performance insights that allow our customers to prevent unscheduled downtime and informed decisions

PROLONG

Extend asset life and runtime by enhancing the ability to take action with data insights

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