



Complete Water Analysis for the **Food Industry**



To see the **entire portfolio**
for the food industry, please visit



SINGAPORE

Your Partner for Water Analysis in the Food Industry

At Hach, we understand your water needs when it comes to ensuring the highest levels of product quality, consistency and safety. Since 1947, Hach Company has designed, manufactured, and distributed world-class instrumentation, test kits, and reagents for testing water quality in a variety of food industry applications, including plant influent, boiler feedwater, product loss reduction, and effluent water treatment.

We invite you to take a look at our comprehensive line of product solutions and services. They're the most accurate and dependable products you can buy.

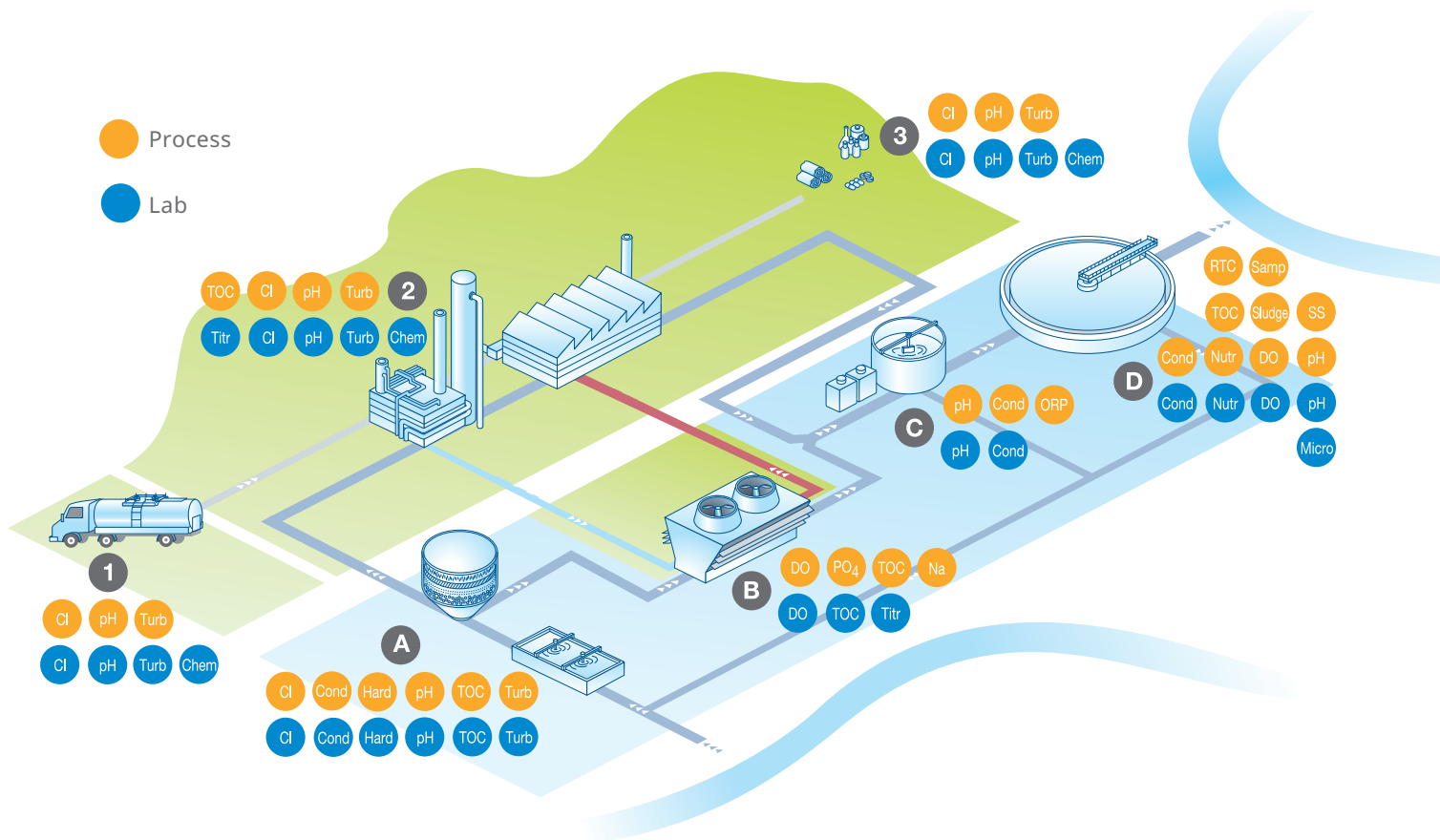
Hach offers:

- On-line process instrumentation and reagents
- Laboratory equipment, reagents, and supplies
- More EPA-approved methods than any other company
- Portable test kits and field instruments
- Automatic samplers and flow meters
- Local sales and service teams
- Service partnership programs and customised training

Whether your goal is to maintain permit compliance, prevent product loss, or optimise water treatment, Hach has expert answers and complete solutions to help you succeed.



Key Measurement Parameters



1 Delivery of Stock

2 Production

3 Finished Goods

A Production Water Treatment

B Steam and Utilities Treatment

C Neutralisation

D Wastewater Treatment

Chem Chemistry

Cl Chlorine

Cond Conductivity

DO Dissolved Oxygen

Hard Hardness

Micro Microbiology

Nutr Nutrients

ORP Oxygen-Reduction Potential

pH pH

PO₄ Phosphate

RTC Real Time Controller

Samp Sampling

Sludge Sludge

Na Sodium

SS Suspended Solids

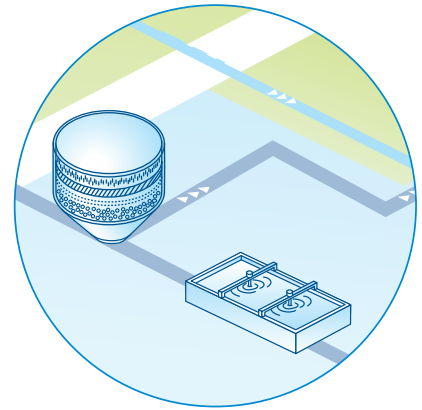
Titr Titration

TOC Total Organic Carbon

Turb Turbidity

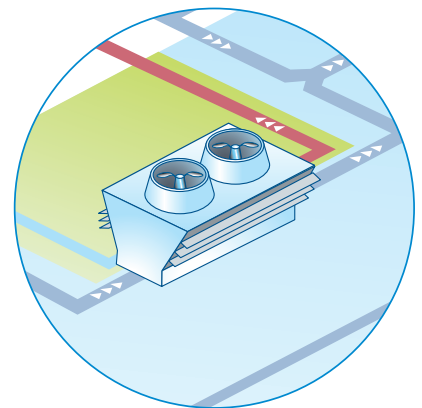
Challenges for Production Water Treatment

- Process control to ensure high product quality, consistency and safety
- Process optimisation to control costs
- Comply with environmental regulations
- Protection of equipment



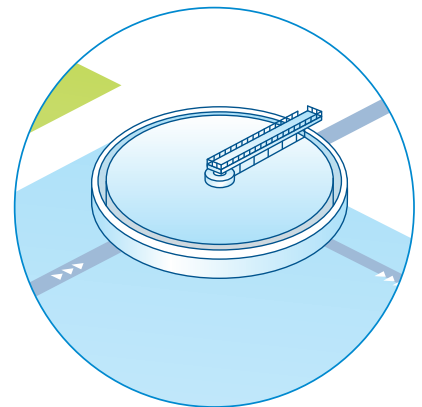
Challenges for Steam & Utilities Water Treatment

- Optimisation of steam generation cycles and condensate recovery to reduce costs and save time
- Optimisation of production processes by pure steam
- Protection of equipment, i.e. preventing corrosion or scaling



Challenges for Effluent & Wastewater Treatment

- Comply with environmental regulations
- Optimisation of process operation, i.e. effective control of aeration in treatment to reduce energy costs and ensure high quality
- Optimising chemical usage to control costs and ensure treatment process stability
- Protection of equipment, i.e. preventing corrosion



Key Parameters for Production Water Treatment

Chlorine

Excessive chlorine harms membrane-based filtration systems and alters taste. Too little chlorine creates an opportunity for microbiological growth. Close monitoring of chlorine levels preserves filtration membranes and prevents the formation of harmful bacteria. Many disinfection programs employ a chlorine, chlorine dioxide or ozone strategy to prevent microbiological growth. Whether raw water, process water, rinse water, or effluent water, constant monitoring of disinfection parameters helps ensure that processes meet product safety, consistency and environmental regulations.

Conductivity/Total Dissolved Solids (TDS)

Conductivity or TDS, the most widely used control parameter for CIP applications, measures caustic or acidic solution strength. Conductivity also monitors process completion to identify product variation and control chemical additives. Inductive conductivity, sometimes referred to as electrodeless or toroidal, remains the industry's primary choice due to sanitary 3A design standards. Conductivity also determines filtration media efficiency by gauging the dissolved, ionic constituents before and after the filtration process.

pH / ORP

pH and ORP commonly measure control processes throughout a facility. pH adjustment prior to filtration prevents precipitation of dissolved materials such as silica and calcium carbonate that clog filters. Maintaining proper pH also ensures maximum effectiveness and minimises the costs of chemical additives, such as disinfectants. ORP monitors the effectiveness of chlorine removal (activated carbon filtration) and controls de-chlorination chemical addition, protecting upstream RO units and reducing chemical costs.

Turbidity

Depending on the water source, turbidity varies dramatically. Often, filtration systems remove excess turbidity and other minerals. While conductivity also monitors dissolved solids, on-line turbidity measurement is the preferred method to monitor filtration efficiency and control backwashing cycle frequency.

Key Parameters for Product Loss Reduction

Organics

Lost product reduction has been a high-ranking objective in the food industry for a long time. Losing otherwise salable product down the drain adds significant cost beyond the product loss itself in the form of higher energy, water, and treatment costs. Using real-time organics monitoring specifically designed for these harsh applications as a management tool allows plants to view and quantify the product in process streams and wastewater, allowing for more informed process control and incident response ultimately leading to reclaimed profit that would have otherwise been lost.

PL control allows customer to take immediate/quick corrective actions.

A quick response is essential to succeed in PL control.

Key Parameters for Effluent & Wastewater Treatment

pH

The continuous monitoring of pH plays an important role in alerting a facility of necessary process adjustments well in advance of a violation. Additionally, pH monitoring at various stages within the wastewater treatment process is critical for maintaining bugs' health, optimising chemical usage, and preventing corrosion to control costs.

Dissolved Oxygen (DO)

The aeration and activated sludge processes require a steady supply of oxygen to function effectively. Insufficient oxygen results in process inefficiency, producing foul-smelling intermediate products and incomplete reactions. Too much oxygen results in excessive energy loss. Since aeration and activated sludge processes constitute up to 70% of a wastewater plant's energy costs, precise monitoring and control of oxygen allows effective and efficient functionality.

Turbidity and Total Suspended Solids (TSS)

Turbidity and TSS measurements are commonly used for wastewater discharge reporting. They also control dissolved air flotation systems, dewatering equipment, and clarifier influent. When applied to polymer feed systems, the additional control often results in significant polymer savings. On-line monitoring and regular sampling protocols reduce the potential of putting excessive solids into the wastewater stream and help prevent permit violations and associated fines.

Nitrogen Removal

Nitrogen enters wastewater treatment plants as Ammonia and is typically removed biologically. Using aeration, the nitrification stage utilises aerobic bacteria to turn Ammonia into Nitrite and then Nitrate. Nitrogen removal happens as bacteria consume the Oxygen from Nitrate turning it into Nitrogen gas that escapes into the atmosphere. Aeration can account for 70% of operating costs because most wastewater treatment plants run their blowers full speed 24 hours a day, 7 days a week in order to meet permit limits. Using Real-Time control solutions to adjust blowers based on Nitrite and Nitrate levels can significantly reduce energy costs.

Phosphorus Removal

Phosphorus does not have a gaseous form, so it must be converted from soluble form to particulate form for removal. Chemical phosphorus removal uses iron or aluminum compounds to combine with and precipitate out phosphate. Over treating water with these chemicals, while an effective method for ensuring permit compliance, will result in wasted chemical spend and increased sludge production. This parameter is easily controlled in real-time, meaning that chemical dosing is based on the volume of phosphorus present and not a single set point.

Dissolved Air Flotation (DAF)

In food processing plants, a DAF is often used to reduce loadings and clarify wastewater. Tiny air bubbles are released into the tank causing small particulates to float to the top where they are skimmed off. To remove larger suspended solids, coagulant is dosed into the feed water—this helps to speed up clumping and settling.

Typically, chemical is dosed to the DAF based on flow rate, but dosing based on flow ignores the solids concentration. This leads to under- and over-dosing which could waste chemicals, increase hauling costs, and result in fines. Real-time data helps facilities dose coagulant based on solids concentrations, eliminating over treating and reducing total costs.

Organics

In wastewater with high organic loads, a facility uses chemical treatment and physical processing to reduce load levels to those acceptable for either re-use or discharge into the environment. Efficient management of organics typically involves Biological Oxygen Demand (BOD) for reporting purposes. However, since the test takes 5 days, surrogates such as Chemical Oxygen Demand (COD), Total Organic Carbons (TOC), and Spectral Absorption Coefficient (SAC) may be used. These offer quicker test results and early detection of upsets or spills for reduced operational and maintenance costs. COD, a relatively simple lab procedure, reduces testing time to 2 hours. On-line TOC monitoring provides results every 7 minutes and on-line UV254 (SAC) monitors continuously for real-time control.

Total Plant Coverage in the Lab

Hach lab instruments are designed to help you easily monitor your water quality at all stages in your plant; from influent to wastewater, process water to cooling water. Our reliable and easy-to-use lab and portable products will help you monitor production and meet compliance objectives.

Find all your instruments and reagents in one place.



SINGAPORE

LAB METHODS

PHOTOMETRIC & COLORIMETRIC



DR6000 Spectrophotometer

- Accessories for High Volume and High Accuracy Testing Needs
- Guided Procedures and Elimination of False Readings
- Automatically Avoids Errors

NEW!



DR4900 Spectrophotometer

- Modern Touchscreen Interface
- Built-in Diagnostic Intelligence
- Reduce Errors and Increase Confidence
- Quick and Accurate
- Guided Procedures
- Removable Sample Cell Compartment for Easy Cleaning
- Easy Vial Identification



DR1900 Spectrophotometer

- The lightest and most compact portable spectrophotometer
- Even in dusty or wet conditions, testing is easy
- With the highest number of preprogrammed methods and an easy-to-use interface



TNTplus Bar-Coded Chemistries

TNTplus vials work exclusively with the DR6000, DR4900, and DR1900* Spectrophotometers.

- Error free and fast—instrument automatically detects and runs the correct method
- Easy, accurate recognition—colour-coded parameters and ranges
- Best results—10 measurements in one rotation, eliminating outliers; optically superior glassware

**Barcode reading, vial spinning, and outlier rejection features not available on DR1900.*



DR300 Pocket Colorimeter

- Robust and waterproof design withstanding extreme conditions
- Accurate and reliable measurement
- Reducing errors and saving time by eliminating manual data entry with optional Bluetooth connectivity
- Simple and intuitive operation to reduce manual error and allows usage under extreme conditions



DR900 Colorimeter

- Fastest and simplest water testing for the most demanding field environments
- Field ready in every way possible
- Intuitive user interface
- Simple data communication



SL1000 Portable Parallel Analyser (PPA)

- Perform multiple tests faster
- Less variability
- Less hassle

SL250 Single-Port Portable Parallel Analysers (PPA)

- Accuracy and repeatability at your fingertips
- Perform your tests faster
- No need to handle chemicals

Chemkeys

Chemkeys are designed for use with the SL1000 & SL250 Portable Parallel Analysers. Use for dramatically streamlined water quality testing.



TU5 Series Laboratory Turbidimeters

Turbidimeters with 360° x 90° Detection™ deliver unprecedented confidence that a change in your reading is a change in your water.

- Matching lab and online results and validate your measurement results
- Fast measurements
- Groundbreaking 360° x 90° Detection™ Technology



2100Q Portable Turbidimeter

- The 2100Q portable turbidimeter has an innovative mode called Rapidly Settling Turbidity that provides accurate measurements for difficult-to-measure, rapidly settling samples
- Convenient data logging with up to 500 measurements automatically stored
- Fast measurements
- Benefit of simple data transfer



TL2300 Tungsten Lamp Turbidimeter

- The new TL23 Series laboratory turbidimeters blend trusted technology and improved features to simplify testing in the most demanding industrial and wastewater applications.
- Improved and intuitive design
- A smart device for more reliable measurements
- Easy to use. Easy to Be Right



Hach Test Kits

From beakers to colorimeters, everything you need is supplied in Hach Single- and Multi-parameter Test Kits.

- Pre-measured reagents
- Accurate colour matching
- Step-by-step instructions
- Upright reagent storage
- Rugged, chemical-resistant cases



Hach Test Strips

Easy to use for fast and reliable water quality screening.



ez COD Recycling for Hach COD Vials

Reduce COD reagent recycling costs and simplify the task of recycling.

- One low price—includes container, pickup, and recycling fees
- Hassle free—place entire vial into receptacle
- Environmentally friendly—Silver and Mercury are reclaimed
- Convenient—order reagents and recycling from one source
- Right sized—pick from three programs based on your annual COD waste output (5, 20, and 55 gallons)

ELECTROCHEMICAL



HQ Series Portable Meters

A robust and intuitive range of portable meters, instilling confidence in reporting and managing your results.

We offer standard laboratory and rugged field IntelliCAL® smart sensors available with the HQ Series to measure a wide variety of parameters including Total Dissolved Solids (TDS), Optical Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Temperature, Conductivity, and pH.

- Performing a successful calibration has never been so simple
- Deliver your daily activity in just a few clicks
- Sensors designed for every application
- Peace of mind: Hach service and support will be there for you



HQD Benchtop Multi-Parameter Meter

All HQD meters feature an advanced yet simple user interface that does not require manuals or training to operate. HQD meters connect with digital IntelliCAL probes and automatically recognise the testing parameter, calibration history and method settings to minimise errors and setup time.

- Automatic probe and parameter recognition.
- Deliver your daily activity in just a few clicks
- Probe specific method settings for regulatory compliance and Good Laboratory Practice (GLP)
- Peace of mind: Hach service and support will be there for you



Intellical Sensor Options

- HQD Meters and Intellical Probes Use a single handheld HQD meter and interchangeable
- Intellical probes for quick, simple, and reliable measurements
- Designed for your water applications, the Hach HQD smart probes automatically recognize the testing parameter, calibration history, and method settings to minimize errors and set-up time
- Hach gives measurement flexibility and ease of operation with its HQD portable and benchtop meter and full suite of interchangeable Intellical laboratory and field probes for testing Conductivity, DO, ORP, pH, Ammonia, and many more!

TITRAMETRIC AND TOTAL OXIDANTS



Titralab AT1000 and KF1000 Series

The Titralab AT1000 Series laboratory analysis systems are one touch, automatic analysers, covering both Potentiometric Titration (AT1000 Series) and Karl Fischer volumetric Titration (KF1000 Series) with pre-set methods that can quickly deliver accurate and reliable results straight from the box, allowing anyone in the laboratory to immediately perform accurate and reproducible titrations.



Hach Digital Titrator

Get accurate ($\pm 1\%$), convenient titrations without the bulk, fragility, or waste of a conventional burette. Test for eighteen parameters including chlorine, hardness, and iron. Uses interchangeable titrant cartridges.

FLOW AND SAMPLING



AS950 Peristaltic Samplers

Hach AS950 Automatic Samplers collect and store unbiased representative water samples for laboratory analysis. The AS950 is configurable to meet all sampling needs by combining a controller, a base, a bottle set, accessories and sampling program features. Every AS950 is equipped with a peristaltic pump with spring-mounted rollers that provide long tubing life and a standard liquid detect sensor for best-in-class sample volume accuracy. Additionally, the USB connection and an auxiliary port for pulse or 4-20 inputs are standard.



AS950 AWRS All-Weather Refrigerator Sampler

The AS950 AWRS is a robust, weather resistant sampler with an integrated refrigerator for applications where temperature control is required for sample preservation.

The sampler base is designed to endure humid and highly corrosive environments, minimising damage caused by corrosive gases, rodents, and standing water to guarantee environmental integrity.

The custom-designed air-sensing thermostat controls temperature in accordance with USEPA and international guidelines, preserving samples regardless of outside temperatures and conditions.

AS950 Portable Sampler

The AS950 Portable Sampler makes programming, data transfer and operation more intuitive and virtually error-free.

- Easiest and most intuitive operation
- Most convenient data transfer and programming available
- Confidence in your sampling process
- Field convertible for compact or discrete sampling
- Easy maintenance at low cost

HACH CHEMISTRIES AND STANDARDS



Hach Chemical Reagents

A complete system that provides confidence in your test results. Chemical reagents include chlorine, ozone, CO₂, O₂, alkalinity, hardness and many more.

- Formulated to minimise interferences, test complexity and analysis time
- Designed for maximum stability and consistency
- Certified by rigorous ISO process procedures

Our high-performance chemistries, reagents and standards are tailored to meet your various needs, ensuring efficiency and compliance in your operations.

**Explore our wide range of
Chemistries, Reagents and
Standards**



SINGAPORE

Conductivity Standards

- Hach conductivity standards are available in a variety of packaging sizes
- Singlets assure freshness and eliminate the possibility of contamination
- All conductivity standards are NIST traceable for optimum conductivity cell calibration

pH Buffers

- Hach calibration pH buffers are available in a variety of colour-coded or colourless solutions, in different packaging types and sizes from 15 mL up to 20 L. pH buffers are also available in convenient single-use pouches (Singlet) and unit-dose powder pillows for on-site and field analyses ensuring freshness, eliminating the possibility of contamination.
- All Hach pH buffers are NIST traceable for optimum pH electrode calibration with an accuracy of ± 0.02 pH at 25 °C.

Production Water Treatment

Proper treatment and conditioning is essential for water as it enters any production process. The water used in production lines of food facilities must not only meet FDA drinking water standards, it must be treated to remove additional minerals and chemicals which could impact taste and production processes. Hach's on-line process instrumentation provides reliable, real-time readings so you can feel confident your water meets your expectations.

ALKALINITY



EZ Series Alkalinity Analysers

Smart automatic features for validation, priming, and cleaning providing excellent analytical performance and maximised uptime.

- Rugged mainframe with compact footprint
- Flexible adaptation of standard measuring range through different calibration ranges or internal dilution options
- Analysis of up to eight sample streams
- Multiple options for determination of Alkalinity available

AMMONIA



5500sc Ammonia Monochloramine Analyser

The 5500sc Ammonia Monochloramine Analyser provides all the information you need to eliminate nitrification events and taste and odor issues, giving you total confidence in your process.

- An easy-to-operate, low-maintenance solution to help you maintain the proper chlorine to ammonia ratio
- A user-friendly interface, colour-coded reagent bottles and at-a-glance status lights will offer peace of mind the instrument is up and running
- A pressurised system to eliminate the hassles and maintenance that pumps can cause

FREE/TOTAL CHLORINE



CL17sc Colorimetric Chlorine Analyser

Take control of challenging water treatment processes with an analyser that maintains accuracy across a wide range of sample conditions.

- Reliable, accurate colorimetric chlorine analysis using DPD chemistry
- Monthly maintenance completed in minutes
- Comprehensive diagnostic features help you verify and troubleshoot quickly and efficiently
- Reagent-free solutions for chlorine, chlorine dioxide, and ozone measurements also available



Ultra Low Range CL17sc Colorimetric Chlorine Analyser

Whether treating utility water, product water, or wastewater discharge, you'll have the direct chlorine measurements you need to optimize your process. You'll be able to protect valuable assets and report to regulatory agencies with confidence.

- Monitor and optimise your dechlorination process
- Depend on direct measurements
- Protect your assets



CLF10sc and CLT10sc Free and Total Reagentless Chlorine Analysers

Hach's answer to reagentless amperometric chlorine measurement.

- Compatible with Hach's "Plug-and-Play" Digital Controllers
- Real time process control
- EPA compliant according to Method 334.0

CHLORIDE



EZ Series Chloride Analysers

The EZ Series Chloride Analysers offer multiple options to monitor Chloride in water.

- Rugged mainframe with compact footprint
- Flexible adaptation of standard measuring range through different calibration ranges or internal dilution options
- Analysis of up to eight sample streams

TURBIDITY & SUSPENDED SOLIDS



TU5300sc/TU5400sc Online Laser Turbidimeters

Turbidimeters with 360° x 90° Detection deliver unprecedented confidence that a change in your reading is a change in your water.

- Matching lab and online results and validate your measurement results
- Fast measurements
- Groundbreaking 360° x 90° Detection Technology

HARDNESS



SP510 Hardness Monitor

The Hach SP510 Hardness Monitor continuously monitors water systems to provide an alarm when total hardness exceeds a pre-set limit. By performing an analysis every two minutes, the SP510 monitor can establish an automatic or semi-automatic system for water softener regeneration.

- Low maintenance—operates unattended for two months
- Low reagent consumption
- Rugged, lightweight, and self-contained



EZ Series Hardness Analysers

The EZ Series Online Analysers offer multiple options to monitor Total Hardness and Calcium Hardness in water.

- Rugged mainframe with compact footprint
- Flexible adaptation of standard measuring range through different calibration ranges or internal dilution options
- Analysis of up to eight sample streams
- Multiple options for determination of Hardness available

CONDUCTIVITY

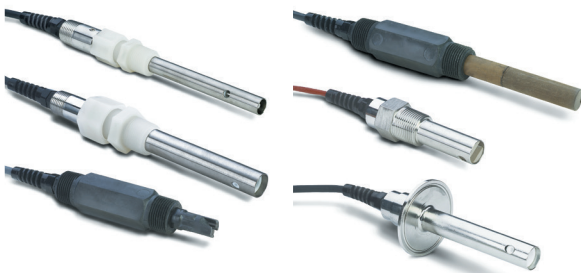


3700sc Digital Inductive (Electrodeless) On-Line Sensors

200 to 2,000,000 $\mu\text{S}/\text{cm}$

Monitor CIP and “push water” control with any of Hach/GLI’s Inductive Conductivity Sensors. With no direct contact between the measuring element and the sample, they are contamination and corrosion resistant.

- Rugged, non-fouling, low maintenance design
- Wide measurement range
- Eliminates polarisation and electrode coating problems in harsh conditions



Contacting Conductivity/Resistivity Sensors

0.057 to 200,000 $\mu\text{S}/\text{cm}$

Monitor membrane health and demineraliser beds with any of these Contacting Conductivity/Resistivity Sensors. Offered in a variety of materials and mounting styles to exacting tolerances to accommodate most configurations.

PH/ORP



pHD Digital Differential On-Line pH/ORP Sensors

For moderate- or high-conductive applications ($>10 \mu\text{S/cm}$) such as monitoring cooling water blowdown, drum boiler water, or raw water treatment.

- Field-proven differential electrode measurement technique offers better accuracy
- Replaceable salt-bridge/protector simplifies maintenance and extends sensor life
- Sensor requires a Hach SC4500 or SC1000 Digital Controller

PRODUCTION WATER
TREATMENT

TOTAL ORGANIC CARBON



Hach BioTector B3500c TOC Analyser

Maximum uptime and reliability for TOC analysis in condensate applications. Using patented technology, only requiring scheduled maintenance every 6 months, allowing for dual stream monitoring, and having one of the most compact analyser footprints, the Hach BioTector B3500c delivers 99.8% uptime in condensate applications with the lowest operating cost.

- Worry-free TOC
- Lowest Cost of Ownership
- Small footprint = Critical Wall Space Savings
- Reagent Costs that Don't Kill the Bottom Line
- One Instrument for Multiple Streams



QP1680 TOC/TN Analyser

The QP1680 is available as a combined TOC and TNb analyser or for the individual parameters TOC or TNb.

The most important features include:

- Direct sample injection eliminates sample contact with valves
- Small footprint with integrated 65-position auto-sampler requires less space in the laboratory
- Simple operation, data analysis and system diagnosis thanks to an intuitive software package

Minimise Product Loss and Reclaim Profits with Hach's Dairy Solutions!

Scan the QR Codes to discover our updated Product Loss for the Food and Dairy Industry page with extensive information, solutions, products and applications.



SINGAPORE

Steam and Utility Water Treatment

Monitoring pH, dissolved oxygen, silica and carbon is essential for keeping the power plant or boiler running properly and protecting capital equipment. Hach's process monitoring solutions for power plants will help you keep your entire facility running by alerting you to potential water quality issues.

ATP

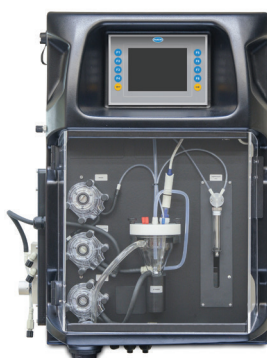


EZ Series ATP Analysers

EZ Series ATP Analysers that offer online monitoring of total bacterial and pathogen load in water.

- Results within minutes
- Complete ATP recovery, differentiating living biomass from non-living
- Complies with ASTM D4012-81
- Low maintenance

HARDNESS



EZ Series Hardness Analysers

The EZ Series Online Analysers offer multiple options to monitor Total Hardness and Calcium Hardness in water.

- Rugged mainframe with compact footprint
- Flexible adaptation of standard measuring range through different calibration ranges or internal dilution options
- Analysis of up to eight sample streams
- Multiple options for determination of Hardness available

PH / ORP



8362 High Purity Water System

Simple to integrate. Simple to operate.

- Works with sc200 platform
- -1500 to +1500 mV ORP range
- 0 to 4 bar (58 psi) pressure range

TOTAL ORGANIC CARBON



Hach BioTector B3500 Series Analyser

Maximum uptime and reliability for TOC analysis in condensate applications. Using patented technology, only requiring scheduled maintenance every 6 months, allowing for dual stream monitoring, and having one of the most compact analyser footprints, the Hach BioTector B3500c delivers 99.8% uptime in condensate applications with the lowest operating cost.

- Worry-free TOC
- Lowest Cost of Ownership
- Small footprint = Critical Wall Space Savings
- Reagent Costs that Don't Kill the Bottom Line
- One Instrument for Multiple Streams

Effluent and Wastewater Treatment

Hach's Real-Time Control solutions optimise your treatment process, saving you operational and treatment costs while helping you maintain permit compliance. Our technology is designed to optimise your entire treatment plant including nutrient removal, sludge treatment and sampling. We offer complete solutions to give you confidence in your water treatment, including predictive diagnostic software to monitor your water quality instruments and a complete service package so you always have access to expert answers.

Discharge compliance issues? Our water quality experts are here to help!



SINGAPORE

EFFLUENT AND
WASTEWATER TREATMENT

DAF TREATMENT

RTC-ST

Designed for DAF applications specifically for use in sludge thickening devices such as dissolved air, the RTC-ST automatically adjusts a desired specific polymer dosing rate (g Polymer / kg TSS) based on the measured influent total suspended solids (TSS) concentration and feed flow rate. To meet exactly your targeted TSS concentration a feedback controller based on the TSS measurement in thickened sludge can be activated.

If a suspended solids sensor input signal is disrupted, the RTC-ST System automatically refers back to a predefined fixed polymer dosing flow to ensure that your process is stable.



PHOSPHORUS REMOVAL

RTC-P

The RTC-P optimises the phosphorus removal processes by adjusting chemical dosing in real time through the continuous measurement of phosphate concentration and flow, allowing you to maintain consistent effluent phosphorus values and enhance your chemical phosphorus control system for unprecedented chemical savings.

Feel confident that you are staying compliant with your discharge permits and that you are saving time and money on your treatment process.

NITRIFICATION CONTROL

RTC-N

Designed specifically for continuously-aerated biological wastewater treatment plants, the RTC-N collects influent and effluent ammonia concentration, flow rate, mixed liquor suspended solids and temperature to calculate the optimal DO set-point necessary to control your aeration system based on your desired effluent ammonia set-point.

RTC-N/DN

Designed specifically for oxidation ditches and sequencing batch reactors, the RTC-N/DN optimises nitrogen elimination by determining optimal times for nitrification and denitrification based on the continuous measurement of ammonia and nitrate concentrations. Depending on your treatment system, the controller operates in one of three modes:

- Nitrification control with an ammonia set point
- Denitrification control with a nitrate set point
- Nitrification and denitrification control with both ammonia and nitrate set points

TOTAL ORGANIC CARBON



Hach BioTector B7000 TOC Analyser

A patented self-cleaning oxidation technology enables BioTector analysers to easily handle difficult samples and significantly reduce the maintenance schedule and costs associated with traditional on-line measurement. BioTector analysers eliminate build up issues from salts, particulates, fats, oils and greases that lead to drift and high maintenance. Configurations are available for TOC, TOC/TN, and TOC/TN/TP.

- Superior Reliability—Typically 99.7% uptime
- High Dependability—Patented two-stage advanced oxidation (TSAO) technology handles even the most challenging applications
- Smart Design—Self-cleaning technology and oversized tubing eliminates filtration and prevents clogging and sample contamination

AMMONIA

NEW!



NH6000sc Ammonia Analyzer

- Four measurement range options between 0.02 mg/L and 1000mg/L
- One or two sample stream options available
- Robust and lightweight integrated filter options
- Improved features including flow detection and automated grab sampling
- Reduced six monthly maintenance schedule

CONTROLLERS



SC4500 Digital Controller

Technologies are advancing rapidly, providing new levels of convenience, accuracy, and efficiency. Which is exactly why the SC4500 Controller from Hach® is designed to integrate easily into your current system while allowing you to upgrade as your capabilities advance, without having to replace inventory. With a wide range of analog and digital connectivity options and the availability of intelligent instrument and data management features, the SC4500 unlocks the future, today.

The familiar experience of a modern touchscreen, the ability to use your current Hach sensors, and the same footprint as the SC200, make installation and integration of the SC4500 Controller seamless.

Hach's Digital Sensor family includes ammonia, chlorine, chlorine dioxide, conductivity, DO, Nitrate, ORP, ozone, pH, phosphate, sludge blanket level, suspended solids, turbidity, and UV absorption.



SC1000 Multi-parameter Universal Controller

The SC1000 is a state-of-the-art modular controller system. Use it directly with 8 sensors or network several together to accommodate many more sensors and parameters. There's no complicated wiring or set up procedures with the SC1000 controller. Plug any Hach digital sensor into a Probe Module and it's ready for use. No special ordering or software configuration is needed. The SC1000 controller can adapt to your needs. Add or change probes without having to change the controller. Plus, with a single Display Module, additional Probe Modules and associated sensors can be added or removed depending on operational needs.

EFFLUENT AND
WASTEWATER TREATMENT

DISSOLVED OXYGEN



Hach LDO Model 2, Optical Process Dissolved Oxygen Probe

Hach's next generation LDO (Luminescent Dissolved Oxygen) Probe requires no calibration for the entire 2 year life of the sensor cap, which means it is ready to start measuring your DO (Dissolved Oxygen) right out of the box. With an added cutting-edge 3D calibration procedure that is conducted prior to shipping, the probe will not drift and is more accurate than ever before.

PH / ORP



pHD Digital Differential On-Line pH/ORP Sensors

For moderate- or high-conductive applications ($>10 \mu\text{S}/\text{cm}$) such as monitoring cooling water blowdown, drum boiler water, or raw water treatment.

- Field-proven differential electrode measurement technique offers better accuracy
- Replaceable salt-bridge/protector simplifies maintenance and extends sensor life
- Sensor requires a Hach SC4500 or SC1000 Digital Controller

ORGANICS



UVAS sc Sensor, 1 mm, 2 mm or 5 mm, with SC4500 Controller

Continuous UV 254 Absorbance/Transmittance measurements with the UVAS sc Sensor can be used to protect plant treatment processes from high organic loads or for surrogate BOD, COD, and TOC measurements, with repeatable, accurate measurement.

- On-line analysis allows treatment plants to operate more efficiently
- Flow through design with no sample chamber and self-cleaning wipers

SLUDGE LEVEL



Sonatax sc Sludge Blanket Level Probe

Ideal tool to optimise sludge extraction, manage recirculation, and warn of potential solid wash outs, or process upsets by continuously measuring the depth from the surface or height from the tank floor. Maintenance is reduced with the probe's innovative wiper design. Automatic frequency adjustment provides superior accuracy

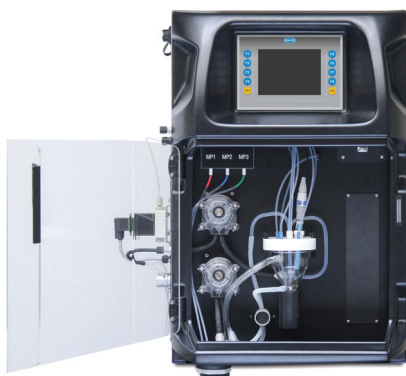
TURBIDITY AND SUSPENDED SOLIDS



Solitax sc Sensors

- Accurate, colour-independent measurements
- Self-cleaning device prevents erroneous values
- Easy one-point calibration
- Sensors work with a Hach SC4500 or SC1000 Digital Controller

VOLATILE FATTY ACIDS



EZ Series Volatile Fatty Acids (VFA) Analysers

The EZ Series VFA Analysers are single-parameter titrators designed specifically for monitoring (wet) anaerobic digesters.

- Direct titration with minimum volatilisation
- Continuous monitoring of the anaerobic process
- Enabling higher loading rate for maximum methane production
- Prevention of digester failure due to VFA accumulation

Prognosys Predictive Diagnostic System

Prognosys allows you to be proactive in your maintenance by alerting you to upcoming instrument issues. Know with confidence whether changes in your measurements are due to changes in your instrument or your water.

- Confidence in your measurements
- Visibility of upcoming maintenance
- Immediate awareness of instrument condition



Compatible Instruments

A-ISE sc

Amtax sc

AN-ISE sc

CL10sc

CL17sc

LDO sc

N-ISE sc

NT3100sc

Phosphax sc

Solitax sc

TU5300sc

TU5400sc





Your Hach instruments serviced by the people who know them best

Having a service plan on your Hach® instruments is akin to adding another team member. That's because we're here to help you maintain operational stability, reduce compliance risk, maximise instrument uptime, control unexpected costs, and ensure data integrity. With regular maintenance visits and validating documentation, you're safeguarding your instrument's accuracy and meeting compliance requirements.

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CONTACT DETAILS:

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	Essential Protection	Premium Protection	Customised Protection
Benefits	• Extend instrument lifetime • Confidence in your results	• Maximum uptime • No unexpected costs • Fully covered repairs	• Maximum uptime • User maintenance • Flexible financing options • Tailored service options
Included in Plan	• Instrument calibration • Preventive maintenance • Automatic alerts • Software updates • Smart monitoring • Proactive support • Wear parts included	• Instrument calibration • Preventive maintenance • Automatic alerts • Software updates • Smart monitoring • Proactive support • Wear parts included • Start up	• Instrument calibration • Preventive maintenance • Automatic alerts • Software updates • Smart monitoring • Proactive support • Wear parts included • Start up
Repairs	• Billable repairs available	• Instrument repairs included • Spare part replacement • Priority repair scheduling	• Instrument repairs included • Spare part replacement • Priority repair scheduling
Customization			• Embedded service experts • Financing options • Tenders • Multi-site service support



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