

Complete Water and Product Quality Analysis

Beverage Industry

HACH®

Be Right™

Your Partner for Water Analysis in the Beverage Industry

At Hach®, we understand your water needs when it comes to ensuring the highest levels of consistent product quality, sustainability, and profitability. Our aim is to support improvements to your processes, removing costly errors, improving products, whilst minimizing product losses. Today's producers aspire to minimize waste and water reuse.

With these goals in mind, it is critical to use the correct instrumentation and chemistries that are designed to withstand the challenges in the beverage industry. Since 1947, Hach beverage professionals design, manufacture, and distribute world class instrumentation, test kits, and chemistries across many beverage industry applications from start to finish across influent, production control, quality lab, and effluent treatment.

Beverage includes products such as beer, bottled water, carbonated and non-carbonated juices/soft drinks & wines. Of these, water is key. Water purification ensures beverage manufacturers are producing a consistently high-quality product while maximizing up time. Beverage plants need highly accurate analytical instruments with minimal maintenance requirements to keep the plant up and running.

We invite you to take a look at our comprehensive line of product and service solutions. As your plant is unique, there may be additional products that will work for your application. Please reach out to one of our local experts for a customized solution.

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 customized training

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







Challenges for Incoming and Raw Water

- Process control to ensure consistency and purity of influent or raw water, as this greatly affects the taste and quality of your final product
- Meeting FDA drinking water regulations
- Removing additional minerals and chemicals which could impact taste and production processes
- Optimizing boiler feed water and cooling tower feed minimizes chemical usage, prevents corrosion, and protects plant equipment

Challenges for Product Quality Control

- Process control to ensure consistent and safe production processes
- Meeting high product quality standards
- Protecting product quality, flavor stability and shelf life
- For breweries it is especially critical to provide proper nutrients for yeast cells
- Optimization of production processes

Challenges for Clean-In-Place Processes

- Ensuring the cleanliness of production surfaces
- Ensuring no microbial growth will contaminate products

Challenges for Effluent and Wastewater Treatment

- Complying with environmental regulations
- Optimization of water conservation
- Support environmental friendly process improvements

Photometric & Colorimetric



DR6000 Spectrophotometer

Top-of-the-line benchtop for advanced analysis, including UV. TNTplus® vials work with the DR6000 Spectrophotometer.

- Accessories for high volume and high accuracy testing needs
- Advanced quality assurance
- Guided procedures and elimination of false readings
- Automatically avoids errors

Brewery Methods

The Brewery Analysis Package software upgrade contains 12 specific brewery assays that conveniently upload via USB to a DR6000. Includes procedures according to the ASBC and MEBAK approved methods for:

Beer Color, Bitterness Units, Iso-Alpha-Acids, Vicinal Diketones, Free Amino Acids, Anthocyanogens, Iron, Steam Volatile Phenols, Total Polyphenols, Photometric Iodine, Thiobarbituric Acid Number (TAN), and Reductones.



DR4900 Spectrophotometer

Designed for lab professionals who demand accuracy and efficiency, this next-generation benchtop spectrophotometer improves upon the trusted DR3900 by delivering maximum usability and minimal wasted time while staying confidently compliant.

- 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

TNTplus® Bar-Coded Chemistries

TNTplus vials use Dosicaps (freeze-dried reagents integrated into a sealed cap) that are easier to use than Powder Pillows or Liquid Reagents, without any risk of contamination.

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



DR900 Colorimeter

Multi-parameter handheld water testing with over 90 colorimetric parameters for use in the most demanding field environments. For use in lab verification to monitor incoming water and process efficient of inline instruments.

- Fastest and simplest testing for the most demanding field environments
- Your important testing methods are available at your fingertips
- Field ready in every way possible
- Intuitive user interface
- Simple data communication





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

TL23 Series Turbidimeters

Trusted measurement for high range turbidity applications, simplified. The TL23 Series laboratory turbidimeters are available in four different models: two models with tungsten lamp at 460 nm, and two models with LED light source at 860 nm. Suggested application includes final lab QA measurement for product quality.

- Improved and intuitive design
- A smart device for more reliable measurements





Hach Test Kits

A variety of test kits are available and can be fully customized. Test for critical parameters to support fermentation and monitoring source water contaminants that affect flavor stability.

- Pre-measured reagents
- Accurate color matching
- Upright reagent storage



Ozone AccuVacs®

Fast, accurate visual method for determining ozone concentrations. Use to perform final lab QA checks for ozone in bottled water. Kit contains 25 tests.

- Simple, low-cost color disc method is the most accurate visual test kit method
- Indigo trisulfonate method masks interferences from chlorine and other oxidizing agents and makes ozone analysis easier

Electrochemical

HQ Meters and IntelliCAL Probes



Handheld HQ® meter and interchangeable IntelliCAL® probes for quick, simple, and reliable measurements, e.g. lab QA check to verify product quality and process efficiencies.

HQ meters and probes are designed for the accurate measurement of pH, DO, Conductivity, Nitrates, and many more parameters. Available in both hand held and lab configurations, HQ meters can be combined with any combination of probes to provide all your necessary measurements in one instrument.

HQD Benchtop Multi-Parameter Meter



Flexible benchtop meter makes lab testing of critical water quality parameters more efficient

One or two input channels for simultaneous measurement of pH, conductivity dissolved oxygen, BOD, ORP, ammonia ammonium, fluoride, chloride, sodium and temperature

Enhance productivity with an ultra-bright screen and large font size to read results easily internal USB ports simplify data transfer, peripherals

SL1000 - PPA Portable Parallel Analyzer™



The Hach SL1000 Portable Parallel Analyzer® (PPA) provides highly accurate results, with less opportunity for errors, in a fraction of the time. The SL1000 is a portable colorimeter that provides 75% faster testing in chloramination applications by using Chemkey® reagents instead of powder pillows. All chemicals and processes are entirely contained inside the Chemkey.

- Up to six parameters, tested in parallel.
- Key parameters include pH, conductivity, chlorine and alkalinity
- Less variability
- Less hassle

SL250 Single-Port Portable Parallel Analyzer (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-PPA Portable Parallel Analyzer. Use for dramatically streamlined water quality testing.



Titrametric

AT1000 Automated Titrator



Acidity has an impact on taste and is an indicator of product quality. The AT1000 determines pH, Total Acidity and SO_2 safely and accurately within a few minutes and offers ready-to-use solutions to perform routine pH, Total Acidity and SO_2 analysis. Total Acidity corresponds to the sum of titratable acids in food and beverages. The main acid in wine is tartaric acid—in juices or soft drink production, it is usually citric or malic acid. These beverages also contain several other acids in different proportions: total acidity corresponds to the sum of titratable acidities. The AT1000 offers pre-programmed and optimized Total Acidity methods delivered on a USB key, which can be downloaded within a few seconds in the titrator.

- Automated titration for accurate and repeatable measurement, with complete traceability
- Minimal reagent contact and eliminate sample preparation
- Use for final QA lab test for total acidity in soft drinks and wine

Oxygen

Orbisphere® 3100 Portable Oxygen Analyzer



Accurate oxygen analysis allows the brewer to control the production process so the flavor stability of the beer can be ensured. The 3100 can be adapted to a piercer to measure dissolved oxygen in packages.

- Designed to withstand the harshest environments
- Rugged, reliable, and maintenance free
- Most stable sensor with the longest calibration interval



Orbisphere 410 / M1100 Luminescent DO Sensor

This controller offers precise and powerful process monitoring capability.

- Intuitive software on a clear and full color touch-screen
- Internal diagnostics and reminders for maintenance and calibration
- Multiple channels and communication options, including USB and Profibus

Can be purchased as a high level oxygen sensor, ideal for the measurement of wort.

Low level oxygen sensor is available for the measurement of bright beer.

Carbon Dioxide / Nitrogen

Orbisphere 510 / 31490TC CO_2 or 31xxx TC N_2

Designed to complement Orbisphere® high quality sensors, the Orbisphere patented Thermal Conductivity sensor has been developed to give continuous CO_2 or N_2 measurements in gas phase or dissolved in a liquid. The measuring technique is a combination of a gas diffusion membrane and a solid-state gas thermal conductivity detector.

- Accurate and repeatable CO_2 or N_2 measurements
- Selective measurement, result unaffected by the presence of other gases
- Fast response time to improve plant productivity
- Compact design for easy insertion into a process line or a flow chamber

Package Analysis

Orbisphere 6110 Total Package Analyzer

The ideal solution for final beverage packages analysis.

- Measures CO_2 by both Pressure/Temperature (P/T) and True-CO_2 methods, and at any temperature
- Easy and automated analysis of oxygen and CO_2 concentrations for both head space and liquid in bottles and cans
- Can perform measurements on all shapes and sizes of cans and bottles
- No need for regular sensor or tubing cleaning due to unique ability to take measurements in the gas phase
- Ergonomic operation and repeatable analysis with intuitive touch screen, single push-button operation and laser package positioning.



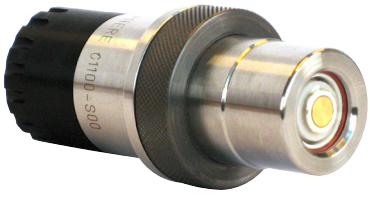


Dissolved Oxygen/Calculated TPO Analyzer

Kit consisting of controller, oxygen sensor, piercing device, and accessories.

- Quick and easy measurements in package for non-carbonated and carbonated drinks
- Fast measurement response
- Quantify oxygen levels for product stability
- Low maintenance

Inline Ozone



Orbisphere 410/510 with C1100 Ozone Sensor

The Orbisphere C1100 sensor is designed to measure ozone in ultra pure water loops, or in the sanitizing phase of any beverage production line. Use to measure ozone to ensure proper ozone dosing in the manufacturing process of bottled water.

- True Zero—drift-free and accurate measurements
- Fast, easy, traceable, and reliable calibration
- Low-cost maintenance
- Unbeatable reliability

Chlorine

Ultra Low Range CL17sc Colorimetric Chlorine Analyzer

- Wide range of controller mounting options available.
- Reliable, direct total chlorine results
- 8 ppb detection limit
- Cumulative Chlorine Counter (needs trademark symbol here) measurements also available





CLF10sc Free Chlorine Sensor

Hach's CLF10sc and CLT10sc provide online amperometric solutions for real-time analysis of free or total chlorine in disinfection applications.

- EPA-approved free or total chlorine analysis
- No reagents to replace, no waste stream
- Chlorine analysis made easy

Turbidity

TU5 Series Process Turbidimeters

The TU5 Series platform employs a patented optical design that sees more of your sample than any other turbidimeter.

- Delivers the best low level precision and sensitivity while minimizing variability between measurements
- Ideal for inline quality measurement to ensure efficient manufacturing process

TU5300 and TU5400 process turbidimeters require an sc controller for operation. If you don't have one already, choose either an SC1000 or SC4500 controller.



Hardness / Alkalinity

EZ Series Hardness Analyzers

The EZ Series Online Analyzers 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





EZ Series Alkalinity Analyzers

Smart automatic features for validation, priming, and cleaning providing excellent analytical performance and maximized 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

Iron

EZ Series Iron Analyzers

The EZ1000sc and EZ2000sc Series Online Analyzers use colorimetric analysis to measure Iron. Multiple options are offered to monitor Total Iron, Dissolved Iron Fe(II), Dissolved Iron Fe(III), and Total Dissolved Iron in water.

- The standard measuring range can be narrowed by a different calibration range or extended via internal dilution options.
- Analog and digital output options
- Multiple stream analysis for up to 8 sample streams



Conductivity

3700 Digital Inductive Conductivity Sensors

Hach Inductive Conductivity Sensors measure 200 up to 2,000,000 microSiemens/cm. Used for the control of CIP processes. Can also be used for product monitoring and quality assurance.



pH (Incoming or Wastewater)

pHD Digital Differential Online pH/ORP Sensors



The complete digital online solution of Differential pH and ORP sensors feature exceptional performance due to the Differential Electrode Measurement Technique. The sensors connects to Claros, Hach's innovative Water Intelligence System, enabling you to seamlessly connect and manage instruments, data, and process—anywhere, anytime.

- Exceptional performance due to the Differential Electrode Measurement Technique
- Available in a wide variety of body materials, mounting styles, pH electrode types, and cable connections

Total Organic Carbon (TOC)

BioTector® B7000



The ideal online TOC analyzer to achieve precise results even for your most challenging applications. A unique self-cleaning oxidation technology enables the B7000 analyzer to easily handle difficult samples and significantly reduce the maintenance schedule and costs associated with traditional on-line measurement.

- Eliminates build up issues from salts, particulates, fats, oils, and greases that lead to drift and high maintenance
- Product loss alarm notification system
- Protect capital equipment and lower CO_2 footprint
- Flexible field of application

BioTector® B3500



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 analyzer footprints, the Hach BioTector B3500c delivers 99.8% uptime in condensate applications with the lowest operating cost.

QP1680 TOC/TN Analyser



The QP1680 Analyzer measures TOC and Total Nitrogen (TN_b) in one sample. The QP1680 is available as a combined TOC and TN_b analyzer or for the individual parameters TOC or TN_b.

The most important features include:

- Direct sample injection eliminates sample contact with valves and the built-in injection syringe, minimising the risk of sample carry-over.
- Large-diameter sample aspiration tubing can handle particles up to 800 µm, expanding possible applications and reducing clogging.
- Integrated stirrer for each sample position homogenises particle-containing samples before injection.
- Small footprint with integrated 65-position auto-sampler requires less space in the laboratory (an auto-sampler with 96 positions is also available as an alternative).
- Simple operation, data analysis and system diagnosis thanks to an intuitive software package.

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

PROGNOSYS®

Compatible Instruments

A-ISE sc

Amtax sc

AN-ISE sc

CL10sc

CL17sc

LDO sc

N-ISE sc

NT3100sc

Phosphax sc

Solitax v

TU5300sc

TU5400sc



Key Parameters

Dissolved Oxygen (DO)

In beverage industries, neglect of proper oxygen levels can cause noticeable changes in taste and clarity of the final product. Level of DO is one of the most critical parameters to control for high product quality standards, flavor and color stability and long shelf life. Care must be taken throughout the process to minimize oxygen pickup from the air. The last, and perhaps the most critical step, is the elimination of oxygen in the packaging operation.

Carbon Dioxide (CO_2)

CO_2 yields the head to beer, bite to soft drinks, fizz to sparkling mineral water and the cork pop and bubbles to champagne and sparkling wine. In beer, CO_2 not only contributes to perceived fullness or body and enhances foaming potential; it also acts as a flavor enhancer. In soft drinks, CO_2 makes the drink more refreshing through its stimulation of the mouth's mucous membranes adding a sensation that the soft drink is colder than it actually is. CO_2 also brings out the aroma since the bubbles drag with them the aromatic components. An improved method for measuring CO_2 in beer, soft drinks and other carbonated beverages is required in order to confirm final product quality. Thermal conductivity is a measurement method that is unaffected by other gases, improving accuracy of vCO_2 results and ensuring final product quality and product consistency.

Nitrogen (N_2)

The use of nitrogen in the brewing industry is becoming widespread in many processes: Not only N_2 is dissolved to high levels in very dark “stout” beers, so that a very thick creamy head is achieved (similar to that of cask beer) but N_2 is also widely used instead of carbon dioxide to flush tanks free of oxygen prior to beer filling for cost optimization reasons. Further, N_2 is becoming widely used in gas-stripping style de-aerators to remove oxygen from brewing water. And lastly, N_2 is used as the “jetting” gas in can fillers so that air is blown out of the headspace before putting on the lid.

Ozone

Ozonization is growing more and more as a disinfection technology to prevent growth of microorganisms and ensuring constant product safety. Ozone is applied in sterilization processes in beverage production and preventing processes from fouling by removing organic material.

Bitterness / International Bitterness Units (IBU)

With a huge variation in bitterness compounds and perceived differences in bitterness taste, beer bitterness tests have become an essential part of quality control in commercial beer production.

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

Conductivity, 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.

Turbidity

Depending on the water source, turbidity varies dramatically. Often, filtration systems remove excess turbidity and other minerals. On-line turbidity measurement is the preferred method to monitor filtration efficiency, control backwashing cycle frequency and to ensure high product quality.

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 is critical for ensuring high product quality, optimizing chemical usage, and preventing corrosion to control costs. Maintaining proper pH also ensures maximum effectiveness and minimizes the costs of chemical additives, such as disinfectants.

Iron

Excessive iron promotes undesirable bacterial growth ("iron bacteria") within a waterworks and distribution system, resulting in the deposition of a slimy coating on the piping.

Alkalinity

Alkalinity is monitored in many water treatment processes to ensure that processes adequately buffer pH and are optimized. In other cases, Alkalinity, Hardness, pH, TDS/conductivity and temperature calculations can indicate corrosion or scaling risk in pipes and other plant infrastructure, allowing you to maximize efficiency, ensure compliance, and control costs.

HACH® SERVICE





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.

With our skilled service techs, we'll help you keep your instruments protected and at peak performance.

Plus, our expertise runs deep. Technical support is a quick call away.

More questions? Reach out.

CONTACT DETAILS:

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The coverage you need from the experts you trust

From helping you start up your equipment to repairs and replacements using genuine Hach parts, we know that less downtime leads to confidence in your results.

	Essential Protection	MOST POPULAR 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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- Portable test kits and field instruments
- Automatic samplers and flow meters
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- Service partnership programs and customized training

To see the complete portfolio of the beverage industry, please visit:

Australia Beverage Industry

Australia Brewing

Australia Wineries & Distilleries

New Zealand Beverage Industry

New Zealand Brewing

New Zealand Wineries & Distilleries

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In the interest of improving and updating its equipment, Hach Company reserves the right to alter specifications to equipment at any time.

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BEVERAGE INDUSTRY

Faster & Easier Access to The Instruments You Need.

Maximise convenience with access to a diverse selection of water-quality products and instruments through our **E-Shop.**

Australia **New Zealand**

Interested?

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HACH®

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