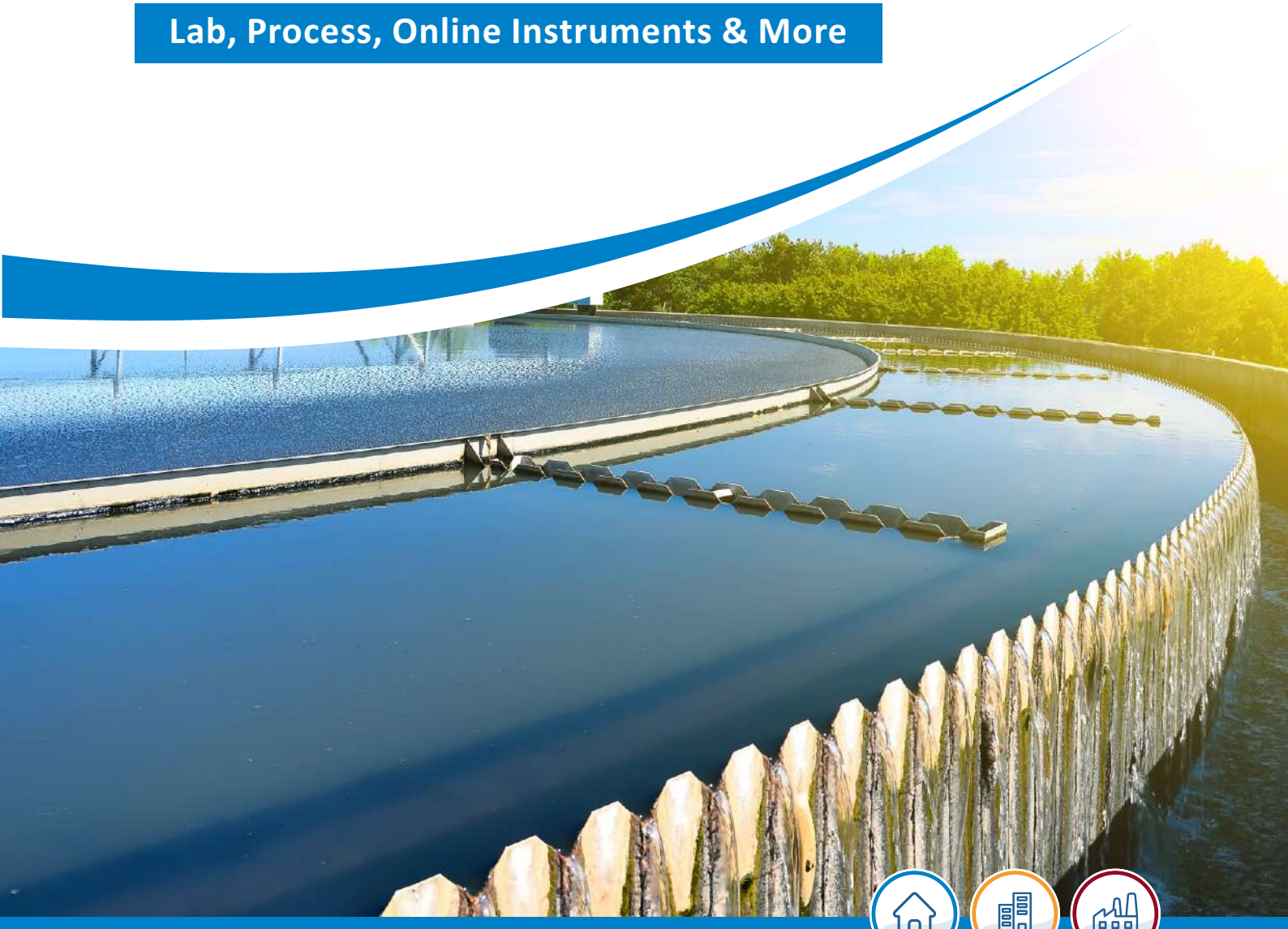
HACH®

Be Right™

Ensure Water Quality
For People Around The World

Water Quality
Products

Lab, Process, Online Instruments & More



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Better Water Quality

From Municipal to Industrial

From large municipal facilities to microbreweries, Hach's solutions can be found on every continent in virtually any industry or application where water quality matters. Simply put, where there is water quality analysis, there is Hach.

Municipal

Drinking Water

Hach's drinking water solutions include a complete portfolio for lab, online, field, and service applications. Our experts continue to innovate portable and online analyzers to help facilities maintain compliance, cut costs, and streamline operations.

Wastewater

Hach wastewater solutions, including our Real-Time Control Systems, nutrient sensors and analyzers, and spectrophotometers, provide the overarching information you need to make compliance and process control improvement easier.

More Municipal

- Education
- Military
- Private Water
- Central Labs

Industrial

Food and Beverage

Our food and beverage portfolio, including lab, online, portable, and integrated solutions, delivers on your top priorities: higher product quality. less product loss, and compliance.

Power Generation

Paired with local field support, online analytics and lab verification cover the comprehensive parameters needed to help ensure maximum uptime and accurate measurement-promoting plant efficiency and compliance.

Chemical

For chemical plants, Hach analytic solutions support environmental performance requirements with online and lab verifications as well as testing solutions that span all critical parameters.

More Industrial

- Oil and Gas
- Pulp and Paper

Engineering and Consulting

Hach's Engineering Design Tool helps engineering consultants make the best design choices and streamline the design process for faster, reliable project plans.

HQ Series Portable Meters

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

Performing a successful calibration has never been so simple

Most measuring issues are due to incorrect calibration procedures. With our illustrated, step-by-step on-screen calibration and troubleshooting procedures, water quality professionals can succeed every time.

Parameter Table

Model	HQ1110 pH/ORP/ 1 Channel	HQ1130 DO/ 1 Channel	HQ1140 EC/TDS/ 1 Channel	HQ2100 Multi/ 1 Channel	HQ2200 Multi/ 2 Channel	HQ4100 Multi/ISE/ 1 Channel	HQ4200 Multi/ISE/ 2 Channel	HQ4300 Multi/ISE/ 1 Channel
Temperature	✓	✓	✓	✓	✓	✓	✓	✓
pH	✓			✓	✓	✓	✓	✓
mV	✓			✓	✓	✓	✓	✓
Conductivity			✓	✓	✓	✓	✓	✓
TDS			✓	✓	✓	✓	✓	✓
Salinity			✓	✓	✓	✓	✓	✓
Resistivity				✓	✓	✓	✓	✓
Dissolved Oxygen (LDO)		✓		✓	✓	✓	✓	✓
BOD (with LDO)		✓		✓	✓	✓	✓	✓
ORP/Redox	✓			✓	✓	✓	✓	✓
Ammonia						✓	✓	✓
Ammonium						✓	✓	✓
Chloride						✓	✓	✓
Fluoride						✓	✓	✓
Nitrate						✓	✓	✓
Sodium						✓	✓	✓

*Subject to change without notice.

Technical Data

Model	HQ1110 pH/ORP/ 1 Channel	HQ1130 DO/ 1 Channel	HQ1140 EC/TDS/ 1 Channel	HQ2100 Multi/ 1 Channel	HQ2200 Multi/ 2 Channel	HQ4100 Multi/ISE/ 1 Channel	HQ4200 Multi/ISE/ 2 Channel	HQ4300 Multi/ISE/ 1 Channel
Data Memory	5000 data points			10,000 data points		100,000 data points		
Display Type	536x336 Mono-TFT			536x336 Mono-TFT		640x480 Color TFT		
Inputs	1			1	2	1	2	3
Weight (Meter only)	519 g			519 g	541 g	530 g	550 g	570 g
Warranty	EU: 2 years US and other geographies: 1 year					3 years		
Dimensions (H x W x D)	63 mm x 97 mm x 220 mm							
Enclosure Rating	IP67 (with battery compartment installed)							
Data Storage	Automatic in Press to Read Mode and Interval Mode. Manual in Continuous Read Mode.							
Data Export	USB connection to PC or USB storage device (limited to the storage device capacity).							
Software available	Claros							
Display	Up to 3 parameters at a time, dependent on HQ model							
Backlight	Yes							
Lock Function	Continuous / Auto-stabilization ("press to read") / At Interval							
Languages	English, Chinese - Simplified, Spanish, French, German, Italian, Japanese, Turkish, Dutch, Portuguese (PT & BR), Korean, Danish, Swedish, Polish, Norwegian, Hungarian, Greek, Finnish, Czech, Romanian, Croatian, Bulgarian, Slovak, Lithuanian, Estonian, Slovenian, Russian							
Certifications	CE, FCC, ISED, RCM, KC, ETL Verified: US DOE/ NRCan Energy Efficiency, RoHS							
GLP Features	Date; Time; Sample ID; Operator ID, Calibration							
Power Supply	Rechargeable lithium-ion battery 18650 (internal)Class II, USB power adapter: 100 - 240 VAC, 50/60 Hz input; 5 VDC at 2 A USB power adapter output (external)							

INTELLICAL: Digital electrodes with built-in temperature sensor

Model	Product description	Cable length	Article number	Cable length	Article number
pH	pH combination gel electrode, low maintenance	1 m	PHC10101	3 m	PHC10103
	pH combination refillable electrode	1 m	PHC30101	3 m	PHC30103
	pH combination refillable electrode for low ionic strength	1 m	PHC28101	3 m	PHC28103
Conductivity	Conductivity 4 pole cell, graphite	1 m	CDC40101	3 m	CDC40103
LDO	Luminescent DO sensor	1 m	LDO10101	3 m	LDO10103
LBOD	Luminescent BOD sensor	1 m	LBOD10101	3 m	
ORP	ORP Gel electrode, low maintenance	1 m	MTC10101	3 m	MTC10103
	ORP Refillable electrode	1 m	MTC30101	3 m	MTC30103
F^-	Fluoride combination ion selective electrode	1 m	ISEF12101	3 m	ISEF12103
NO_3	Nitrate combination ion selective electrode	1 m	ISENO318101	3 m	ISENO318103
Na^+	Sodium combination ion selective refillable electrode	1 m	ISENA38101	3 m	ISENA38103
NH_3	Ammonia combination gas-sensing electrode with refillable outer body	1 m	ISENH318101	3 m	SENH318103
NH_4	Ammonium combination ion selective electrode	1 m	ISENH418101	3 m	ISENH418103
Cl^-	Chloride combination ion selective electrode	1 m	ISECL18101	3 m	ISECL18103

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

BODTrak II Respirometric BOD Apparatus

- Simplify BOD analysis and decreases the total test time
- Greaseless bottle seal, large graphical display and small footprint
- BOD results are made easier to monitor with the large graphic display that continuously update results
- Constant stirring in the bottles supplier additional oxygen to sample, this is faster than dilution method
- The BODTrak II can fit six of 492 mL bottles

IntelliCAL LBOD101 Senso for BOD Measurements

- No membranes to foul or replace, no electrolyte solution to replenish, and fast
- Probes provide ultimate traceability in measurement history (time, operator, sample ID, calibration history, parameter, and probe serial number)
- IntelliCAL digital probes can be moved between meters without the need to re-calibrate or re-enter measurement settings

Colorimeters / Spectrophotometers

DR300 Colorimeter

- Single Parameter go-anywhere portable photometer Easy to install,
- Battery operation for a maximum of 5000 tests
- Waterproof instrument IP67 (even better than PCII)
- Larger, better display
- Data connectivity. Bluetooth to Claros
- Bluetooth connectivity currently available onlyin US, Canada and EU.

DR 900 Multiparameter Handheld Colorimeter

- Fastest and simplest water testing for the most demanding field environments
- Satisfies your core testing needs
- Field ready in every way possible
- Waterproof, dustproof and field durable
- Ability to test up to 90 methods
- Intuitive user interface
- USB data transfer is available
- Wavelength range: 420 nm, 520 nm, 560 nm, 610 nm

DR 1900 VIS Spectrophotometer

- Combines ruggedness and portability of field instrument with over 220 of most commonly tested water methods
- Ensure accuracy in the field with wavelength range of 340-800 nm.
- Carry more water methods wherever you need them most
- Water protection is IP67 (water proof)
- Wavelength resolution: 1 nm

DR 6000™ UV VIS Spectrophotometer

- Your water testing needs, all in one spectrophotometer
- More than 250 kinds of built-in water quality parameters for test method application
- Time-saving automatic method detection and superior accuracy
- High-speed wavelength scanning across the UV and visible spectrum
- Wavelength accuracy: ± 1 nm in wavelength range 190 - 1100 nm

Lico Spectral Colorimeter

- All important color scales included in one instrument
- Automatic cuvette identification III
- High level of measurement reliability through a comprehensive set of test aids
- Simple integration into the laboratory network through Ethernet connection
- Easy to change cuvette adapter

DR 3900 Benchtop Spectrophotometer

- Consistently accurate results in simpler testing format
- Built-in applications over 240 kinds of water quality test methods
- Reading mode: transmittance (%), absorbance and concentration
- Wavelength accuracy: ± 1.5 nm (wavelength range 370 - 1100 nm)
- Wavelength range: 320 - 1100 nm

Digital Reactors

DRB200 Digital Reactor

- Provides one-key operation that's unique and fast
- Block heats from 20 to 150°C in less than 10 minutes
- Fully insulated heater block with no skin contact
- Accommodates most test vials
- Select dual block model for simultaneous digestions
- Select single / dual block model for simultaneous digestions

TSS Portable Hand-held Turbidity, Suspended Solids, and Sludge Level System

- Suspended Solids: 0.001 to 400 g/L (1 to 400,000 mg/L)
- Three Parameters in One Instrument
- Multiple Calibration Curves for Convenience
- Easy Sludge Blanket Levels
- Air Bubble Compensation for Accuracy

Turbidimeters

2100Q Portable Turbidimeter

- Easy on-screen assisted calibration and verification
- Accurate for rapidly settling samples
- Convenient data logging
- Optical system for precision in the field
- Resolution: 0.01 NTU (FNU) on lowest range
- Measurement range: 0 - 1000 NTU

TL23 Series Benchtop Turbidimeters

- The TL23 Series large full color touch screen display and intuitive user interface accelerate setup, calibration and measurement
- The TL23 Series ensures stable readings and accurate analysis by capturing turbidity readings once the device detects sample stability
- With a USB port for easy data export, sample identification for traceability, and self-diagnostics for quality assurance

Turbidimeters

TU5 Series Laboratory Turbidimeter

- The platform employs a patented optical design that sees more of your sample than any other turbidimeter, delivering the best low-level precision and sensitivity while minimizing variability from test to test.
- Groundbreaking 360° x 90° Detection Technology
- Matching lab and online results
- Everything about turbidity – faster

TitraLab AT1000 & KF1000Series

- The TitraLab AT1000 from Hach uses pre-set functions that eliminate complex programming and provide accurate results.
- Eliminates operator interpretation and manual processes with automatic titration to quickly deliver accurate and repeatable results
- Pre-programmed titration methods detect end points and eliminate manual calculations to make results easier to achieve without advanced programming

TOC Analyzers

QP1680 Lab TOC Analyzers

- Direct sample injection eliminates sample contact with valves and the built-in injection syringe, which minimizes 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 homogenizes 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.
- The ease of use in drinking water applications and the maintenance concept makes the QP1680 unique on the market.

QBD1200 + TOC Analyzer

Autosampler for use with QBD1200 Laboratory TOC Analyser

- Custom calibration routine allows any combination of standards
- Save and reload custom calibration routines
- 5 replicate measurements are now available
- Manual measurement screen has graphs displayed
- Export data/user settings in XML format to support LIMS integration

Applications

- Drinking Water
- Semiconductor
- Power
- Clear Samples TOC

Sampler

AS950 Portable Samplers

- AS950 Portable Sampler is designed for accuracy and convenience
- Field convertible for compact or discrete sampling
- Quickly switch between composite and discrete sampling in the field.
- Configurable for single- or multiple-bottle applications
- Composite container, from 1 to 999 samples and Sample Volume Programmable in 10-mL (0.34 oz) Increments from 10 to 10,000 mL (3.38 oz to 2.6 gal)

AS950 All-Weather Refrigerated Samplers

- The large full color display and intuitive programming give you access to all your programmable criteria on a single screen
- Utilizes a USB drive to upload and download data and copy programs from one sampler to another
- Designed to endure humid and highly corrosive environments
- Programmable for sample volume in 10-mL increments from 10 to 10,000 mL

Hach Methods
Quick Reference Guide

The ranges given are for the pre-calibrated instrument readout; higher ranges can be analyzed by sample dilution. Parameters marked "EPA" are EPA-approved, accepted, or equivalent for reporting purposes; sample pretreatment may be required on some procedures. If no reagent set is listed for a parameter, order needed reagents and supplies separately.

Part numbers may vary by country.

Test	EPA	Method	Number	Range	DR6000	DR3900	DR1900	DR900	DR300	SL1000	Prod. No.
Alkalinity, Total (TNTplus)		Colorimetric	10239	25 - 400 mg/L	•	•	•				**TNT870**
Alkalinity, Total, LR (Chemkey)		Colorimetric	10280	20 - 200 mg/L						•	**8636200**
Alkalinity, Total, HR (Chemkey)		Colorimetric	10283	200 - 700 mg/L						•	**8636100**
Aluminum		Aluminon	8012	0.008 - 0.800 mg/L	•	•	•	•	•		**2242000**
Aluminum		Eriochrome Cyanine R	8326	0.002 - 0.250 mg/L	•	•	•				**2603700**
Aluminum (TNTplus)		Chromazurol S	10215	0.02 - 0.50 mg/L	•	•	•				**TNT848**
ANAMMOX Activity (TNTplus)		Cytochrome C	10304	0 - 33 umol/L	•	•	•				**TNT882**
Ammonia, Nitrogen		Salicylate	8155	0.01 - 0.50 mg/L	•	•	•	•	•		**2668000**
Ammonia, Nitrogen (TNTplus), ULR	•	Salicylate	10205	0.015 - 2.000 mg/L	•	•	•				**TNT830**
Ammonia, Nitrogen	•	Nessler	8038	0.02 - 2.50 mg/L	•	•	•				**2458200**
Ammonia, Nitrogen (Test 'N Tube), LR		Salicylate	10023	0.02 - 2.50 mg/L	•	•	•	•			**2604545**
Ammonia, Nitrogen (TNTplus), LR	•	Salicylate	10205	1 - 12 mg/L	•	•	•				**TNT831**
Ammonia, Nitrogen (Test 'N Tube), HR		Salicylate	10031	0.4 - 50.0 mg/L	•	•	•	•			**2606945**
Ammonia, Nitrogen (TNTplus), HR	•	Salicylate	10205	2 - 47 mg/L	•	•	•				**TNT832**
Ammonia, Nitrogen (TNTplus), UHR	•	Salicylate	10205	47 - 130 mg/L	•	•	•				**TNT833**
Ammonia, Nitrogen (TNTplus), UHR+	•	Salicylate	10301	100 - 1800 mg/L	•	•	•				**TNT834**
Ammonia, Free (Chemkey)		Indophenol	10269	0.05 - 0.50 mg/L						•	**9429600**
Ammonia, Total (Chemkey)		Indophenol	10268	0.05 - 1.50 mg/L						•	**9425200**
Arsenic	•	Silver Diethyldithiocarbamate	8013	0.020 - 0.200 mg/L	•	•	•				**–**
Barium		Turbidimetric	8014	2 - 100 mg/L	•	•	•				**1206499**
Benzotriazole		UV Photolysis	8079	1.0 - 16.0 mg/L	•	•	•	•			**2141299**
Boron (TNTplus)		Azomethine-H	10274	0.05 - 2.50 mg/L	•	•	•				**TNT877**
Boron		Carmine	8015	0.2 - 14.0 mg/L	•	•	•				**–**
Bromine		DPD	8016	0.05 - 4.50 mg/L	•	•	•	•	•		**2105669**
Bromine (AccuVac)		DPD	8016	0.05 - 4.50 mg/L	•	•	•	•	•		**2503025**
Cadmium		Dithizone	8017	0.7 - 80.0 µg/L	•	•	•				**2242200**
Cadmium (TNTplus)		Cadion	10217	0.02 - 0.30 mg/L	•	•	•				**TNT852**
Carbohydrazide		Iron Reduction	8140	5 - 600 µg/L	•	•	•	•			**2446600**
Chloramine, Mono, LR		Indophenol	10171, 10200	0.04 - 4.50 mg/L	•	•	•	•	•		**2802246**
Chloramine, Mono (Test 'N Tube), HR		Indophenol	10172	0.1 - 10.0 mg/L	•	•	•				**2805145**
Chloramine, Mono (Chemkey)		Indophenol	10270	0.04 - 4.00 mg/L						•	**9429400**
Chloride		Mercuric Thiocyanate	8113	0.1 - 25.0 mg/L	•	•	•				**2319800**
Chloride (TNTplus)		Mercuric Thiocyanate	10291	1 - 70 mg/L Cl 70 - 1000 mg/L Cl	•	•	•				**TNT879**
Chlorine, Free		Indophenol	10241	0.04 - 4.50 mg/L	•	•	•	•			**–**
Chlorine, Free	•	DPD	8021	0.02 - 2.00 mg/L	•	•	•	•	•		**2105569**
Chlorine, Free (AccuVac)	•	DPD	8021	0.02 - 2.00 mg/L	•	•	•	•	•		**2502025**
Chlorine, Free (Pour-Thru Cell)		DPD Rapid Liquid	10059	0.02 - 2.00 mg/L	•	•	•				**2556900**
Chlorine, Free (TNTplus)	•	DPD	10231	0.05 - 2.00 mg/L	•	•	•				**TNT866**
Chlorine, Free (Test 'N Tube)		DPD	10102	0.09 - 5.00 mg/L	•	•	•				**2105545**
Chlorine, Free, MR	•	DPD	10245	0.05 - 4.00 mg/L	•	•	•	•	•		**1407099**
Chlorine, Free, HR	•	DPD	10069	0.1 - 10.0 mg/L	•	•	•	•	•		**1407099**
Chlorine, Free & Total (TNTplus)	•	DPD	10232	0.05 - 2.00 mg/L	•	•	•				**TNT867**
Chlorine, Free (Chemkey)	•	DPD	10260	0.04 - 4.00 mg/L						•	**9429000**
Chlorine, Total (Pour-Thru Cell), ULR	•	DPD	8370, 10014	2 - 500 µg/L	•	•	•				**2563000**
Chlorine, Total	•	DPD	8167	0.02 - 2.00 mg/L	•	•	•	•	•		**2105669**
Chlorine, Total (AccuVac)	•	DPD	8167	0.02 - 2.00 mg/L	•	•	•	•	•		**2503025**
Chlorine, Total (Pour-Thru Cell)		DPD Rapid Liquid	10060	0.02 - 2.00 mg/L	•	•	•				**2557000**
Chlorine, Total (Test 'N Tube)		DPD	10101	0.09 - 5.00 mg/L	•	•	•				**2105645**
Chlorine, Total, MR	•	DPD	10250	0.05 - 4.00 mg/L	•	•	•	•	•		**1406499**

Test	EPA	Method	Number	Range	DR6000	DR3900	DR1900	DR900	DR300	SL1000	Prod. No.
Chlorine, Total, HR		DPD	10070	0.1 - 10.0 mg/L	•	•	•	•	•		**1406499**
Chlorine, Total (Chemkey)	•	DPD	10260	0.04 - 10.00 mg/L						•	**9429100**
Chlorine Demand/Requirement	•	DPD	10223	Multiple Ranges	•	•	•	•	•		**—**
Chlorine Dioxide, DPD	•	DPD/Glycine	10126	0.04 - 5.00 mg/L	•	•	•	•	•		**2770900**
Chlorine Dioxide, LR		Chlorophenol Red	8065	0.01 - 1.00 mg/L	•	•	•				**2242300**
Chlorine Dioxide, MR		Direct Reading	8345	1 - 50 mg/L	•	•	•	•			**—**
Chlorine Dioxide, HR		Direct Reading	8138	5 - 1000 mg/L	•	•	•				**—**
Chromium, Hexavalent	•	1,5 Diphenylcarbohydrazide	8023	0.010 - 0.700 mg/L	•	•	•	•			**1271099**
Chromium, Hexavalent and Total (TNTplus)	•[1]	1,5 Diphenylcarbohydrazide	10218, 10219	0.03 - 1.00 mg/L	•	•	•				**TNT854**
Chromium, Total		Alkaline Hypobromite Oxidation	8024	0.01 - 0.70 mg/L	•	•	•	•			**2242500**
Cobalt		PAN	8078	0.01 - 2.00 mg/L	•	•	•				**2651600**
COD, ULR		Dichromate	8000	0.7 - 40.0 mg/L	•	•	•				**2415825**
COD, LR	•	Dichromate	8000	3 - 150 mg/L	•	•	•	•			**2125825**
COD, HR	•	Dichromate	8000	20 - 1,500 mg/L	•	•	•	•			**2125925**
COD, HR+		Dichromate	8000	200 - 15,000 mg/L	•	•	•	•			**2415925**
COD		Manganese III	10067	30 - 1000 mg/L	•	•	•	•			**2623425**
COD, Mercury-Free (TNTplus), HR		Dichromate	10236	25 - 1000 mg/L	•	•	•				**TNT825**
COD in Salt Water (TNTplus), LR		Dichromate	10299	7 - 70 mg/L	•	•	•				**TNT815**
COD in Salt Water (TNTplus), HR		Dichromate	10299	70 - 700 mg/L	•	•	•				**TNT816**
COD (TNTplus), ULR		Dichromate	10211	1 - 60 mg/L	•	•	•				**TNT820**
COD (TNTplus), LR	•	Dichromate	8000	3 - 150 mg/L	•	•	•				**TNT821**
COD (TNTplus), HR	•	Dichromate	8000	20 - 1500 mg/L	•	•	•				**TNT822**
COD (TNTplus), UHR		Dichromate	10212	250 - 15,000 mg/L	•	•	•				**TNT823**
COD (TNTplus) UHR+		Dichromate	10212	5,000 - 60,000 mg/L	•	•	•				**TNT824**
Color[5]		ADMI Weighted Ordinate	10048	3 - 1000 units	•	•					**—**
Color, True and Apparent		Platinum-Cobalt	8025	15 - 500 units	•	•	•	•			**—**
Color, True and Apparent, LR		Platinum-Cobalt	8025	3 - 500 units	•	•					**—**
Copper, LR		Porphyrin	8143	1 - 210 µg/L	•	•	•	•			**2603300**
Copper	•	Bicinchoninate	8506	0.04 - 5.00 mg/L	•	•	•	•			**2105869**
Copper (AccuVac)		Bicinchoninate	8026	0.04 - 5.00 mg/L	•	•	•	•			**2504025**
Copper (TNTplus)[2]		Bathocuproine	10238	0.1 - 8.0 mg/L	•	•	•				**TNT860**
Copper (Chemkey)	•	Bicinchoninate	10272	0.06 - 5.00 mg/L						•	**9429200**
Cyanide		Pyridine-Pyrazalone	8027	0.002 - 0.240 mg/L	•	•	•	•			**2430200**
Cyanide (TNTplus)	•	Pyridine barbituric acid	10265	0.01 - 0.6 mg/L CN	•	•	•				**TNT862**
Cyanuric Acid		Turbidimetric	8139	5 - 50 mg/L		•	•	•			**246066**
DEHA (Diethylhydroxylamine)		Iron Reduction	8140	3 - 450 µg/L	•	•	•	•			**2446600**
Detergents (Surfactants)		Crystal Violet	8028	0.002 - 0.275 mg/L	•	•	•	•			**2446800**
Dissolved Oxygen (AccuVac), LR		Indigo Carmine	8316	0.04 - 4.50 mg/L	•	•	•	•			**2501025**
Dissolved Oxygen (AccuVac), HR		HRDO	8166	0.3 - 15.0 mg/L	•	•	•	•	•		**2515025**
Dissolved Oxygen (AccuVac), UHR		Ultra High Range	8333	1.0 - 40.0 mg/L	•	•	•				**2515025**
Erythorbic Acid (Isoascorbic Acid)		Iron Reduction	8140	13 - 1500 µg/L	•	•	•	•			**2446600**
Fluoride, Arsenic Free	•[3,4]	SPADNS 2	10225	0.02 - 2.00 mg/L	•	•	•	•			**2947549**
Fluoride, Arsenic Free (AccuVac)	•[3,4]	SPADNS 2	10225	0.02 - 2.00 mg/L	•	•	•	•			**2527025**
Fluoride, Arsenic Free (TNTplus)	•[3]	SPADNS 2	10225	0.1 - 2.5 mg/L	•	•	•				**TNT878**
Fluoride	•[4]	SPADNS	8029	0.02 - 2.00 mg/L	•	•	•	•			**44449**
Fluoride (AccuVac)	•[4]	SPADNS	8029	0.02 - 2.00 mg/L	•	•	•	•			**2506025**
Formaldehyde		MBTH	8110	3 - 500 µg/L	•	•	•				**2257700**
Formaldehyde (TNTplus)		Acetylacetone	10295	0.5 - 10 mg/L H_2CO	•	•	•				**TNT871**
Hardness, Total, ULR		Chlorophosphonazo Colorimetric	8374	8 - 1000 µg/L	•	•	•				**2603100**
Hardness, Total, ULR (Pour-Thru Cell)		Chlorophosphonazo Rapid Liquid	8167	4 - 1000 µg/L	•	•	•				**—**
Hardness, Ca & Mg		Calmagite Colorimetric	8030	0.05 - 4.00 mg/L	•	•	•	•			**2319900**
Hardness, Total, LR (Chemkey)		Calmagite Colorimetric	10284	3 - 100 mg/L						•	**8636400**
Hardness, Total, HR (Chemkey)		Calmagite Colorimetric	10285							•	**8638400**
Hardness, Water (TNTplus)		Metalphthalein	10293	20 - 350 mg/L as $CaCO_3$ 5 - 100 mg/L Ca 3 - 50 mg/L Mg	•	•	•				**TNT869**
Hydrazine		p-Dimethylaminobenzaldehyde	8141	4 - 600 µg/L	•	•	•	•			**179032**

[1]EPA approved for Cr6+ only. [2]As listed, test determines soluble metal. Order Metals Prep Set TNT890 to determine total metal.

[3]Per 40 CFR 136.6 Method Modification and Flexibility. [4]Not EPA accepted for drinking water using the DR900 colorimeter.

*[5]Others color scale available: CIE L*a*b, Hazen, Iodine, Gardner, Yellowness & EBC (Z).*

Test	EPA	Method	Number	Range	DR6000	DR3900	DR1900	DR900	DR300	SL1000	Prod. No.
Hydrogen Peroxide (H_2O_2)[1]		DPD	10290	0.05 - 5.00 mg/L	•	•	•				**1406499**
Hydroquinone		Iron Reduction	8140	9 - 1000 µg/L	•	•	•	•			**2446600**
International Bitterness Units (TNTplus)		Analogous MEBAK and ASBC	10288	≥ 2 BE	•	•					**TNT817**
Iodine DPD		DPD	8031	0.07 - 7.00 mg/L	•	•	•				**2105669**
Iodine DPD (AccuVac)		DPD	8031	0.07 - 7.00 mg/L	•	•	•				**2503025**
Iron (TNTplus)[2]	•	Phenanthroline	10229	0.2 - 6.0 mg/L	•	•	•				**TNT858**
Iron		FerroZine	8147	0.009 - 1.400 mg/L	•	•	•	•			**230166**
Iron (Pour-Thru Cell)		FerroZine Rapid Liquid	8147	0.009 - 1.400 mg/L	•	•	•				**230149**
Iron, Ferrous		1, 10 Phenanthroline	8146	0.02 - 3.00 mg/L	•	•	•	•			**103769**
Iron, Total		FerroMo	8365	0.01 - 1.80 mg/L	•	•	•	•			**2544800**
Iron, Total		TPTZ	8112	0.012 - 1.800 mg/L	•	•	•	•	•		**2608799**
Iron, Total	•	FerroVer	8008	0.02 - 3.00 mg/L	•	•	•	•	•		**2105769**
Iron, Total (AccuVac)	•	FerroVer	8008	0.02 - 3.00 mg/L	•	•	•	•	•		**2507025**
Iron, Total (5-cm Sample Cell)		1,10 Phenanthroline	10306	0.01 - 1.00 mg/L	•	•					**HPT251**
Iron, Total Dissolved (Chemkey)		1,10 Phenanthroline	10281	0.05 - 3.00 mg/L						•	**8636000**
Isoascorbic Acid (Erythorbic Acid) (ISA)		Iron Reduction	8140	13 - 1500 µg/L	•	•	•	•			**2446600**
Lead		LeadTrak Fast Column Extraction	8317	5 - 150 µg/L	•	•	•				**2375000**
Lead	•	Dithizone	8033	3 - 300 µg/L	•	•	•				**2243100**
Lead (TNTplus)[2]		PAR	10216	0.1 - 2.0 mg/L	•	•	•				**TNT850**
Manganese, LR		PAN	8149	0.006 - 0.700 mg/L	•	•	•	•			**2651700**
Manganese, LR		PAN	10286	0.005 - 0.500 mg/L	•	•	•				**HPT291**
Manganese, HR		Periodate Oxidation	8034	0.1 - 20.0 mg/L	•	•	•	•	•		**2430000**
Magnesium (TNTplus)		Metalphthalein	10292	0.5 - 50 mg/L Mg	•	•	•				**TNT849**
Mercury		Cold Vapor Mercury Concentration	10065	0.1 - 2.5 µg/L	•	•	•				**2658300**
Methylethylketoxime (MEKO)		Iron Reduction	8140	15 - 1000 µg/L	•	•	•	•			**2446600**
Molybdenum, Molybdate, LR		Ternary Complex	8169	0.02 - 3.00 mg/L	•	•	•	•	•		**2449400**
Molybdenum, Molybdate, HR		Mercaptoacetic Acid	8036	0.2 - 40.0 mg/L	•	•	•	•			**2604100**
Nickel[3]		PAN	8150	0.006 - 1.000 mg/L	•	•	•	3			**2651600**
Nickel	•	Heptoxime	8037	0.02 - 1.80 mg/L	•	•	•				**2243500**
Nickel (TNTplus)[2]		Dimethylglyoxime	10220	0.1 - 6.0 mg/L	•	•	•				**TNT856**
Nitrate, Nitrogen, LR		Cadmium Reduction	8192	0.01 - 0.50 mg/L	•	•	•	•			**2429800**
Nitrate, Nitrogen (TNTplus), LR	•	Dimethylphenol	10206	0.23 - 13.5 mg/L	•	•	•				**TNT835**
Nitrate, Nitrogen, MR		Cadmium Reduction	8171	0.1 - 10.0 mg/L	•	•	•	•			**2106169**
Nitrate, Nitrogen (AccuVac), MR		Cadmium Reduction	8171	0.1 - 10.0 mg/L	•	•	•	•	•		**2511025**
Nitrate, Nitrogen		UV Screening	10049	0.1 - 10.0 mg/L	•						**–**
Nitrate, Nitrogen (Test 'N Tube), HR		Chromotropic Acid	10020	0.2 - 30.0 mg/L	•	•	•	•			**2605345**
Nitrate, Nitrogen, HR		Cadmium Reduction	8039	0.3 - 30.0 mg/L	•	•	•	•	•		**2106169**
Nitrate, Nitrogen (AccuVac), HR		Cadmium Reduction	8039	0.3 - 30.0 mg/L	•	•	•	•	•		**2511025**
Nitrate, Nitrogen (TNTplus), HR	•	Dimethylphenol	10206	5 - 35 mg/L	•	•	•				**TNT836**
Nitrite, Nitrogen, LR	•	Diazotization	8507	0.002 - 0.300 mg/L	•	•	•	•			**2107169**
Nitrite, Nitrogen (Test 'N Tube), LR		Diazotization	10019	0.003 - 0.500 mg/L	•	•	•	•			**2608345**
Nitrite, Nitrogen (TNTplus), LR	•	Diazotization	10207	0.015 - 0.600 mg/L	•	•	•				**TNT839**
Nitrite, Nitrogen (TNTplus), HR	•	Diazotization	10237	0.6 - 6.0 mg/L	•	•	•				**TNT840**
Nitrite, Nitrogen (TNTplus), UHR	•	Diazotization	10296	2 - 90 mg/L	•	•	•				**TNT841**
Nitrite, Nitrogen, HR		Ferrous Sulfate	8153	2 - 250 mg/L	•	•	•	•			**2107569**
Nitrite, Nitrogen (Chemkey)		Diazotization	10271	0.005 - 0.600 mg/L						•	**9429300**
Nitrogen, Ammonia (see Ammonia, Nitrogen)											
Nitrogen, Total (Test 'N Tube), LR		Persulfate Digestion	10071	0.5 - 25.0 mg/L	•	•	•	•			**2672245**
Nitrogen, Total (TNTplus), LR		Persulfate Digestion	10208	1 - 16 mg/L	•	•	•				**TNT826**
Nitrogen, Total (TNTplus), HR		Persulfate Digestion	10208	5 - 40 mg/L	•	•	•				**TNT827**
Nitrogen, Total (Test 'N Tube), HR		Persulfate Digestion	10072	2 - 150 mg/L	•	•	•	•			**2714100**
Nitrogen, Total (TNTplus), UHR		Persulfate Digestion	10208	20 - 100 mg/L	•	•	•				**TNT828**
Nitrogen, Total Inorganic (TIN) (Test 'N Tube)		Titanium Trichloride Reduction	10021	0.2 - 25.0 mg/L	•	•	•	•			**2604945**
Nitrogen, Simplified TKN (TNTplus)	•	s-TKN	10242	0 - 16 mg/L	•	•	•				**TNT880**
Nitrogen, Total Kjeldahl (TKN)		Nessler	8075	1 - 150 mg/L	•	•	•	•			**2495300**
Organic Carbon, Total (See TOC)											**–**
Organic Constituents, UV-Absorbing (UV-254)		Direct Reading	10054	Varies-Units Abs/cm	•						**–**
Oxygen Demand, Chemical (See COD)											**–**
Oxygen, Dissolved (See Dissolved Oxygen)											**–**

[1]Requires Product. No. 193332 & 1456842. [2]As listed, test determines soluble metal. Order Metals Prep Set TNT890 to determine total metal.
[3]Nickel PAN method reagent set for DR 900 is Prod. No. 2242600.

Test	EPA	Method	Number	Range	DR6000	DR3900	DR1900	DR900	DR300	SL1000	Prod. No.
Oxygen Scavengers (See specific compounds)											–
Ozone (AccuVac), LR		Indigo	8311	0.01 - 0.25 mg/L	•	•	•	•	•		**2516025**
Ozone (AccuVac), MR		Indigo	8311	0.01 - 0.75 mg/L	•	•	•	•	•		**2517025**
Ozone (AccuVac), HR		Indigo	8311	0.01 - 1.50 mg/L	•	•	•	•			**2518025**
Peracetic Acid (PAA)[1]		DPD	10290	0.10 - 10.00 mg/L	•	•	•				**1406499**
Peracetic Acid (PAA) (Chemkey)		DPD	10297	0.04 - 50.00 mg/L						•	**8635200**
pH (Chemkey)		Colorimetric Phenol Red	10298	10298 6.3 - 9.0 units						•	**9759000**
pH		Colorimetric Phenol Red	10076	6.5 - 8.5 units				•			**2657512**
Phenols	•	4-Aminoantipyrine	8047	0.002 - 0.200 mg/L	•	•	•				**2243900**
Phenols (TNTplus)		4-Aminoantipyrine	10266	5 - 150 mg/L	•	•	•				**TNT868**
Phosphonates		Persulfate UV Oxidation	8007	0.02 - 125.0 mg/L	•	•	•	•			**2429700**
Phosphorus, Reactive	•	PhosVer 3	8048	0.02 - 2.50 mg/L	•	•	•	•	•		**2106069**
Phosphorus, Reactive (AccuVac)	•	PhosVer 3	8048	0.02 - 2.50 mg/L	•	•	•	•	•		**2508025**
Phosphorus, Reactive (Test 'N Tube)	•	PhosVer 3	8048	0.06 - 5.00 mg/L	•	•	•	•			**2742545**
Phosphorus, Reactive		Amino Acid	8178	0.23 - 30.00 mg/L	•	•	•	•			**2244100**
Phosphorus, Reactive (5-cm Sample Cell)		Ascorbic Acid	10307	0.01 - 0.50 mg/L	•	•					**HPT487**
Phosphate, LR (Chemkey)		Ascorbic Acid	10279	0.20 - 4.00 mg/L						•	**8636600**
Phosphate, HR (Chemkey)		Ascorbic Acid	10282	2.0 - 30.0 mg/L						•	**8636500**
Phosphorus, Reactive		Molybdovanadate	8114	0.3 - 45.0 mg/L	•	•	•	•			**2076032**
Phosphorus, Reactive (Test 'N Tube), HR		Molybdovanadate	8114	1.0 - 100.0 mg/L	•	•	•	•			**2767345**
Phosphorus, Reactive (Pour-Thru Cell), HR		Molybdovanadate Rapid Liquid	8114	0.3 - 45.0 mg/L	•	•	•				**2076049**
Phosphorus, Reactive (Pour-Thru Cell), LR	•	Ascorbic Acid Rapid Liquid	10055	19 - 3000 µg/L	•	•	•				**2678600**
Phosphorus, Reactive (TNTplus)		Molybdovanadate	10214	5.0 - 90.0 mg/L	•	•	•				**TNT846**
Phosphorus, Acid Hydrolyzable (Test 'N Tube)		PhosVer 3 with Acid Hydrolysis	8180	0.06 - 3.50 mg/L	•	•	•	•			**2742745**
Phosphorus, Total (Test 'N Tube)	•	PhosVer 3 with Acid Persulfate Digestion	8190	0.06 - 3.50 mg/L	•	•	•	•			**2742645**
Phosphorus, Total (Test 'N Tube), HR		Molybdovanadate with Acid Persulfate Digestion	10127	1.0 - 100.0 mg/L	•	•	•	•			**2767245**
Phosphorus, Reactive and Total (TNTplus), LR	•	Ascorbic Acid	10209, 10210	0.15 - 4.50 mg/L	•	•	•				**TNT843**
Phosphorus, Reactive and Total (TNTplus), HR	•	Ascorbic Acid	10209, 10210	1.5 - 15.0 mg/L	•	•	•				**TNT844**
Phosphorus, Reactive and Total (TNTplus), UHR	•	Ascorbic Acid	10209, 10210	6 - 60 mg/L	•	•	•				**TNT845**
Potassium		Tetraphenylborate	8049	0.1 - 7.0 mg/L	•	•	•				**2459100**
Quaternary Ammonium Compounds		Direct Binary Complex	8337	0.2 - 5.0 mg/L	•	•	•				**2459200**
Silica (Pour-Thru Cell), ULR		Heteropoly Blue	8282	3 - 1000 µg/L	•	•	•				**2553500**
Silica (Pour-Thru Cell), ULR		Heteropoly Blue Rapid Liquid	8282	3 - 1000 µg/L	•	•	•				**2678500**
Silica, LR		Heteropoly Blue	8186	0.010 - 1.600 mg/L	•	•	•	•			**2459300**
Silica, HR		Silicomolybdate	8185	1 - 100 mg/L	•	•	•	•			**2429600**
Silver		Colorimetric	8120	0.02 - 0.70 mg/L							
Sulfate	•	SulfaVer 4	8051	2 - 70 mg/L	•	•	•	•			**2106769**
Sulfate (TNTplus), LR		Turbidimetric	10227	40 - 150 mg/L	•	•	•				**TNT864**
Sulfate (TNTplus), HR		Turbidimetric	10227	150 - 900 mg/L	•	•	•				**TNT865**
Sulfide	•	Methylene Blue	8131	5 - 800 µg/L	•	•	•	•			**2244500**
Sulfide (TNTplus)	•	Dimethyl-p-phenylenediamine	10294	0.1 - 2.0 mg/L	•	•	•				**TNT861**
Surfactants (See Detergents)											–
Surfactants, Anionic (TNTplus)		Methylene Blue (MBA)	8131	0.1 - 4.0 mg/L	•	•	•				**TNT874**
Surfactants, Cationic (TNTplus)		Cetyltrimethylammonium Bromide	10305	0.2 - 2.0 mg/L	•	•	•				**TNT885**
Surfactants, Nonionic LR (TNTplus)		TBPE	10275	0.2 - 6.0 mg/L as Triton x 100	•	•	•				**TNT875**
Surfactants, Nonionic HR (TNTplus)		TBPE	10275	6 - 200 mg/L as Triton X-100	•	•	•				**TNT876**
Suspended Solids		Photometric	8006	5 - 750 mg/L	•	•	•	•			–
Tannin & Lignin		Tyrosine	8193	0.1 - 9.0 mg/L	•	•	•	•			**2244600**
TKN (See Nitrogen, Simplified TKN and Nitrogen, Total Kjeldahl)											

[1]*Requires Product. No. 193332 & 1456842.*

Test	EPA	Method	Number	Range	DR6000	DR3900	DR1900	DR900	DR300	SL1000	Prod. No.
TOC (Total Organic Carbon), LR		Direct Method	10129	0.3 - 20.0 mg/L	•	•	•	•			**2760345**
TOC - Total Organic Carbon (TNTplus), LR	•	Direct Method	10267	1.5 - 30 mg/L	•	•	•				**TNT810**
TOC (Total Organic Carbon), MR		Direct Method	10173	15 - 150 mg/L	•	•	•	•			**2815945**
TOC (Total Organic Carbon), HR		Direct Method	10128	100 - 700 mg/L	•	•	•	•			**2760445**
TOC - Total Organic Carbon (TNTplus), HR	•	Direct Method	10267	30 - 300 mg/L	•	•	•				**TNT811**
Tolytriazole		UV Photolysis	8079	1.0 - 20.0 mg/L	•	•	•	•			**2141299**
Toxicity		ToxTrak	10017	0 - 100 % inhibition	•	•	•	•			**2597200**
TPH in Soil[1]		Immunoassay	10050	2 - 20 ppm, threshold	•	•	•				**2774300**
TPH in Water		Immunoassay	10050	2 - 20 ppm, threshold	•	•	•				**2774300**
Trihalomethanes (THM)		THM Plus	10132	10 - 600 µg/L	•	•	•				**2790800**
Trihalomethane Formation Potential (THMFP)		THM Plus	10224	10 - 600 µg/L	•	•	•				**2790800**
Vicinal Diketone - VDK (TNTplus)		Analogous MEBAK and ASBC	10276	0.015 - 0.5 mg/kg	•	•					**TNT819**
Volatile Acids		Esterification	8196	27 - 2800 mg/L	•	•	•	•			**2244700**
Volatile Acids (TNTplus)		Esterification	10240	50 - 2500 mg/L	•	•	•				**TNT872**
Zinc	•	Zincon	8009	0.01 - 3.00 mg/L	•	•	•	•	•		**2429300**

[1]*Requires Soil Extraction Kit. Please order Prod. No. 2775100.*

Online / Process Instruments

Organic & Nutrients

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

A-ISE sc

A-ISE sc Low cost ISE Ammonium probe (immersion) with RFID, 10 m cable

- Cost-Effective Trending Information
- Minimal Maintenance with Simple Cartridge Replacement
- Easy to perform, fail-safe calibration corrections compensate for naturally occurring calibration drift in ISE instruments

HACH BioTector TOC Analyzer

- Provides low maintenance
- Self-cleamng technology prevents Clogging and Sample Contamination
- Analyze without filtering; for measuring of clean and dirty water
- Recommended Application: Industrial, Wastewater, Food & Beverage, Mining, Airports, chemical, petrochemical and Refining.

Amtax sc

Amtax sc Ammonium Analyzer, 0.05-20 mg/L NH_4-N, One Channel Continuous Sample, 115-230 VAC

- Hach's Amtax Ammonium Analyzer provides a wide measurement range for a variety of wastewater applications.
- Low detection limit of 0.05 mg/L.
- Environmentally controlled for rugged, outdoor installations. Designed specifically for easy installation at the measurement point.
- Automatic cleaning and calibration every day.
- Easy access to reagents and wear parts.

N-ISE sc

N-ISE sc Low cost ISE Nitrate probe (immersion) without RFID, 10 m cable

- Carries out continuously direct measurements using an ion-selective electrode.
- The special feature of the probe is the Cartrical technology. This provides reliable measured values and considerably reduced maintenance time and costs in comparison with conventional ISE probes..
- Trustable results for ammonium and nitrate
- Easy handling with Cartrical cartridge plus
- Simple and intuitive operation
- Always under control

AN-ISE

AN-ISE sc Low cost ISE combination Ammonium and Nitrate probe (immersion) with RFID, 10 m cable

Two-in-one low maintenance sensor measures both ammonium and nitrate at the same time.

- Accurate results for ammonium and nitrate
- Easy handling with Cartrical cartridge plus
- Simple and intuitive operation
- Always under control
- Rely on Hach's application know how

NITRATAX sc

Nitratax plus sc Sensor, 1 mm path length with automatic cleaning

- UV Analysis Eliminates Reagents, Sampling, and Sample Conditioning
- Optional Bypass Panel
- Choice of Three Models
- Self-Cleaning Sensor

Phosphax sc

Phosphax sc Phosphate Analyzer, 0.05-15 mg/L PO_4-P, One Channel Continuous Sample, 115-230 VAC

- Multiple measurement ranges for a variety of wastewater applications
- Low cost of operation with proven yellow method
- Generate actionable insights from measurement data
- Easy installation at the measurement point
- Low maintenance

Degas cation conductivity panel (DCCP)

DCCP is used by power plants to verify that conductivity meets plant specifications and warranty conditions for the turbine manufacturer during plant startups and/or blowdowns, and before ramping up power to peak load.

Controller

SC4500 Controller

- Multi-channel controller operate either 1 or2 sensors reducing inventory holding cost provides maximum versatility
- Password protected USB reader offers simple solution for data download and transfer
- One controller gives you numerous communication options.
- Technologies are advancing rapidly, providing new levels of convenience, accuracy and efficiency.

SC Controller

SC1000 Multi-parameter Universal Controller Display and Probe Module

- Color touch-screen display
- Accepts 2-8 sensors or up to 2 Analyzers combination
- Additional relays and analog inputs and outputs can be added by networking a second probe module or optioanal DIN -rail communication modules
- Advanced and flexible communication options features additional
- The Hach SC1000 Display Module is available with GSM/GPRS, Ethernet, and TCP/IP capability

CL17sc Analyzer

Free or Total Chlorine Confidence. From the Global Leader in Chlorine Analysis.

Enhanced Connectivity
Compatibility with the SC controller platform, giving users more flexibility to store, transfer, and interact with their process chlorine data.

Maintenance Made Easy
Reduces your routine maintenance touch time with simplified tubing replacement and step-by-step, on-screen workflows.

Flow Sensor
A built-in flow meter to notify you when there's an unexpected change in flow that could compromise your measurements. The CL17sc is compliant with US EPA regulation 40 CFR 141.74. Both method 4500-CL G and method 334.0 can be used for measuring residual chlorine in drinking water.

CLF10 sc • CLT10 sc

CLF10 sc Free Chlorine Sensor, SC200 Controller and Stainless Steel Panel with pHD Differential Sensor

Hach's CLF10 sc and CLT10 sc provide online amperometric solutions for real-time analysis of free or total chlorine in disinfection applications.

- The CLF10 sc Free Chlorine Analyzer and CLT10 sc Total Chlorine Analyzer are based on amperometric technology and is fully compatible with all Hach digital controllers.
- The CLF10 sc can be used in most municipal and industrial applications and is best utilized where waste stream management is a constraint.
- EPA-approved Free or Total Chlorine Analysis
- No Reagents to Replace, No Waste Stream
- Chlorine Analysis Made Easy

Ultra Low Range CL17sc Colorimetric Chlorine Analyser

- New Ultra-Low Range CL17sc provides better accuracy in the parts-per-billion measurement range.
- With upgraded features like a flow meter, colorimeter window, multicolor status light, and predictive diagnostic software, you know your instrument is operating as intended.

***Accuracy at Lower Range**
With accuracy in the parts-per-billion measurement range, you can take control of your decoloring on process, protect your assets from chlorine damage, and meet strict residual chlorine limits.

***Cumulative Chlorine Counter™**
Understand the true impact of chlorine exposure on downstream assets over me by tracking chlorine exposure in ppm-hours.

***Parts per Billion Reading**
Eliminate reading confusion when process adjustments and chlorine discharge require ultra low range control.

AMC / Silica Analyzer 5500 sc

5500sc Silica Analyzer, 1 Channel, Reagents included

- 90 Days of Continuous Run Time
- Save Time on Maintenance
- Clean, Fast and Easy Reagent Change
- Verify Easily with Hach Lab Products So You Don't Waste Time Second-guessing

Analyzers

NA5600 sc

NA5600sc Sodium Analyzer, 1-channel, with Autocalibration, panel mount

Optimize Operation and Response Time with Automatic Electrode Reactivation

To maintain optimum response time and accuracy, the NA5600sc analyzer provides automatic electrode reactivation. Reactivation uses non-hazardous chemicals and eliminates the need for manual reactivation or electrode etching.

- **Space-Saving Design :** Smaller instrument footprint with streamlined layout to allow for easy integration into existing or new sites.
- **Low Maintenance :** Maintenance of the NA5600sc Sodium Analyzer requires reagent replenishment only every 90 days and annual replacement of reagent tubing and the sodium electrode.
- **Avoid Downtime :** Predictive diagnostic tools, including Hach's proprietary Prognosys technology, warning LEDs, and high visibility notification screens let you avoid unplanned downtime.

EZ Series Hardness Analyzer

EZ1000, EZ4000, and EZ5000 Series

Effective and continuous monitoring and treatment of Hardness iskey to maintaining stable water in a variety of processes. Combined with Alkalinity, pH, TDS/conductivity, and temperature, calculations can indicate corrosion or scaling (LSI - Langford Scaling Index) risk in pipes andother plant infrastructure enabling you to take action inmaximizing efficiency, ensuring compliance, and controlling costs.

ULTRATURB seawater sc Turbidimeter

Suitable for low to medium turbidity applications.

- Large measuring range—0 to 1,000 NTU
- Self-cleaning sample chamber option
- Stable/long lasting light source with IR ratio technology
- Updated for desalination applications
- Corrosion resistant to salinity up to 65 g/L

Surface Scatter 7 sc

- The Surface Scatter 7 sc High Range Turbidimeter offers superior performance across a measurement range of 0 to 9999 NTU.
- This design minimizes sensitivity loss due to high turbidity samples; in fluids with high loads of suspended solids the design makes sample cell cleaning and replacement unnecessary.
- Surface Scatter 7 sc HST is designed to monitor samples with temperatures of up to 70°C.
- Its innovative moist air removal system is useful where a difference between the sample temperature and the ambient temperature causes condensation and fogging.

Solitax® sc

- Designed for the accurate determination of turbidity and suspended solids
- Accordance with DIN EN ISO.
- Using the infrared duo scattered light method
- Solitax sc sensors can be connected to all SC controllers
- Self-cleaning wiper

TU5 Series Turbidimeter

- Continuously flowing sample flows through with groundbreaking 360° x 90° detection™ Technology
- Everything about turbidity — faster
- Maintenance and cleaning is easy
- Matching lab and online results
- Recommended Applications: Drinking, Pure and Industrial Water
- Measurement range:
  - EPA version 0 to 700 NTU
  - ISO version 0 to 1000 NTU

SONATAX sc PROBE

Low-maintenance sludge level monitor delivers superior accuracy.

- For a continuous ultrasonic measurement of sludge blanket level
- Reduced maintenance with innovative wiper design
- Superior accuracy with automatic frequency adjustment
- Digitized probe, temperature compensation, and position sensor ensure reliability
- Visual performance indicator enhances troubleshooting
- The digital ultrasonic probe Sonatax sc continuously measures the sludge level or the sludge height.

TSS sc

- Made of highly polished stainless steel or titanium
- Two channel 90° scattered light turbidity method
- Accordance with DIN EN ISO 7027.
- Integrated bubble and temperature compensating software

pH Encapsulated Sensor

- LCP (Liquid Crystal Polymer)
- Convertible Mounting Style
- 3 Meter Analog Cable
- 5-Wire with Built-In Preamplifier
- General Purpose Glass pH Electrode
- Gel Filled Standard

Differential pH • ORP sensor

Differential ORP Sensors

- Plug and Play Capability with Hach's Digiatal SC Controllers
- Uses three electrodes instead of the two normally used in conventional pH/ORP sensors.
- Encapsulated construction protects the sensor's built-in preamp from moisture and humidity

The result is unsurpassed measurement accuracy, reduced reference junction potential, and elimination of sensor ground loops. These sensors provide greater reliability, resulting in less downtime and maintenance.

Contacting Conductivity sensor

These enhanced performance sensors are manufactured to exacting tolerances using high quality, rugged materials for demanding applications including ultra-pure water, clean-in-place (CIP), and boiler/condensate monitoring.

Ultimate accuracy from ultra-pure to high conductivity applications.

- Fast response to changes in temperature with ±0.1° C accuracy
- Measure from theoretically pure water (0.057 µS/cm or 18.2 MΩ) up to 200,000 µS/cm

Combination pH • ORP sensor

3/4" Combination pH Sensor, Convertible Sensor Style, Ryton Body Material, General Purpose pH Glass Electrode, Temperature Compensation - PT1000 Ohm RTD

- Double-junction design for extended service life, and a built-in solution ground.
- Body is molded from chemically-resistant Ryton® or PVDF, and the reference junction is coaxial porous PTFE
- All sensors are rated 0 to 105° C up to 100 psig,

Inductive Conductivity sensor

The Hach digital Inductive Conductivity Sensors measure 200 up to 2,000,000 microSiemens/cm. A built-in Pt 1000 RTD compensates the measured conductivity changes in process temperature

The Hach Digital Inductive Conductivity Sensors measure 200 up to 2,000,000 µS/cm. A built-in Pt 1000 RTD compensates the measured conductivity for changes in process temperature.

- Wide measuring range
- Low maintenance design
- Versatile mounting styles
- Withstands harsh environments

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 cuttingedge 3D calibration procedure that is conducted prior to shipping, the probe will not drift and is more accurate than ever before.

Applications

- Wastewater
- Industrial Water
- Drinking Water

Industrial BioTector Selection Guide



	B7000i	B3500e	B3500c	B3500ul
Applications	• Industrial Wastewater Treatment Plant Influent and Effluent • Process Water • Product Loss Control • Oil in Water	• Industrial Wastewater Treatment Plant Effluent • Discharge Control • Storm/River Water • Ground/Raw Surface Water	• Condensate Return • Cooling Water • Boiler Feed Water • Demineralized Water • Reverse Osmosis Water • Carbon Bed Absorber	• Pharma • Power • Electronics • Ultrapure Water
TOC Range	0- 100 up to 0- 20,000 ppm	0- 250 or 1,000 ppm	0- 25 or 100 ppm	0- 5 ppm
TOC Mode	TIC/TOC, TC, VOC *	TIC/TOC, TC	TIC/TOC, TC, VOC	TIC/TOC, TC, VOC
Two-Stage Advanced Oxidation	Yes	Yes	Yes	Yes
Self Cleaning	Reactor & Sample Tubing	Reactor & Sample Tubing	Reactor	Reactor
Sample Characteristic	<2 mm articles Dirty Fat, oil, greases, sludge and salts pH swings	<100 µm particles Semi-Dirty Some fat, oil, greases, sludge Some pH swings	<100 µm particles Clean Free of fat, oil, greases, stable pH	No particles Very Clean Free of fat, oil, greases, stable pH
Number of Streams	6	1	2	2

*Configurations to measure TP/TN also available.

BioTector

- **Intelligent design** oversized sample tubing handles even the most challenging applications, including limited amounts of fats, oil, and grease (FOG)
- **Advanced functionality** direct reporting of % removal (B3500dw), and reporting of TOC correlated parameters such as BOD and COD
- **Powerful sample breakdown** patented Two-Stage self-cleaning oxidation technology (TSAO) is 40% more effective at oxidizing samples than analyzers
- **Low cost of ownership** designed for continuous operation, the TOC BioTector requires part replacement only twice a year in many applications
- **Superior reliability** typically 99.86% uptime enables plants to leverage results for continuous process control
- **Worldwide service and support through Hach** with installations at leading manufacturers around the world

Recommended Application

- Industrial
- Wastewater
- Drinking
- Food & Beverage
- Pulp & Paper
- Pharmaceutical
- Mining
- Airports and Chemical
- Petrochemical
- Refining

Orbisphere K1100 (Industrial)

The Orbisphere K1100 optical sensor together with the Orbisphere 410 controller offers a new way of monitoring oxygen in power plants. Orbisphere sensors set the industry standards for oxygen measurement by offering peace of mind to every water chemist.

- One calibration per year
- No membranes = two minutes of maintenance
- Low-cost retrofit

Orbisphere GA2x00 Oxygen Sensors

The Orbisphere GA2400/GA2800 EX oxygen (O_2) Electrochemical (EC) sensors are designed for process monitoring as well as laboratory analysis in the liquid or gas phases across.

The Orbisphere GA2400 O_2 EC-sensor can be used for a wide range of applications from beer or soft-drinks production to rinsing of semiconductor waters in chip-manufacturing plants, reactor coolant systems in nuclear power plants etc.

The GA2800 EX sensor is suitable for harsh environments from chemical or oil to petrochemical plants.

Orbisphere M1100 (Food & Beverage)

The Orbisphere M1100 Luminescent dissolved oxygen analyzer, together with the Orbisphere 410 one channel and the Orbisphere 510 multichannel controller, offers a new way of monitoring oxygen in the beverage production process. The M1100 model optical sensor has an unbeatable precision of 0.8 ppb and a limit of detection of 0.6 ppb. Such accurate measurement readings are essential to control low oxygen levels in beer. The absence of membrane and electrolyte means that the analyzer accuracy is unaffected by process changes or pressure shocks. The dissolved oxygen analyzer has been designed to optimize its total cost of ownership.

- Minimal Drift and Annual Calibration
- Minimal Maintenance Optical Technology
- Low Level Oxygen Measurement with Accurate ppb
- High Level Oxygen Measurement with Accurate ppm

Ozone

Orbisphere 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.
This unique sensor does not require a specific set up or skilled operators for in-line operation.

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

Orbisphere 315xx Nitrogen Sensors

The unique Orbisphere Thermal Conductivity sensor has been developed to give continuous 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.

- Continuous 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

Orbisphere 410/510 Controller (Portable, Wall, Panel Mount)

Designed to complement Orbisphere® high quality sensors, the Orbisphere patented Thermal Conductivity sensor has been developed to give continuous CO_2, N_2 or O_2 measurement 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.

Hach Orbisphere 6110 Total Package Analyzer

- Fast, Effective operation with touch-screen interface
- The package positioning aid with laser crosshairs confirms optimal placement
- latest technology in final package analysis for measurements of Total Package Oxygen, Headspace Oxygen and Dissolved Oxygen

Portable / Lab Analyzer

Orbisphere 3100 Portable Oxygen Analyser

With Luminescent Dissolved Oxygen (LDO) technology integrated into the Orbisphere 3100, this analyser is guaranteed to improve process efficiency and provide accurate dissolved oxygen measurements.

- Robust design that endures harsh environments
- Fast response time and accurate measurements
- Very low drift; requires less than once a year calibration/maintenance
- Little downtime and low cost of ownership
  User friendly instrument with colour display
- Ideal for process spot check by plant operator

Orbisphere 3650/3655 Portable Oxygen Analyzer

3650/3655 handheld analyzer measures both saturated and trace level (down to 1 ppb) concentrations of oxygen in gases and liquids accurately.
Stores up to 500 measurements.
Rechargeable batteries allow up to 40 hours of continuous operation.

- Unrivaled accuracy and response time for fast detection of process change
- No warm up necessary for accurate measuring
- Unique design allows for extended period between recharges
- Sensor refurbishment takes 3 minutes with pre-filled recharge cartridge
- Waterproof, super-sturdy, lightweight analyzer
- ATEX System

Steam and Water Analysis System

SWAS Panels

Modular, Walkway Types and Shelter Base

Hach's Steam and Water Analysis System (SWAS) measures degassed & cation conductivity, silica, and sodium, that helps protect and reduce the downtime of your plant. We also manufacture the Shelter Base Sample Handling System.

- DN32 waste sample
- DN25 cooling water outlet
- DN25 cooling water inlet
- Sample inlet
- High Pressure Sample Panels SL200H
- 9525 analyzers
- 9240 analyzers
- 5500sc analyzers
- Electrical cabinet 500x500x250
- Signal cabinet 500x500x250

EZ Series Online Analyzers

Your Complete Solution

Monitoring Solutions for Industrial and Municipal Applications

- **Wide Analytical Range**
- **Flexibility**
- **Faster Decisions**
- **Expand Your Capabilities**

Applications

EZ Series parameters cover the complete water cycle from water intake to wastewater effluent. Learn more by downloading application notes and parameter specific documents from the Hach® Support Page. Some examples:

- Aluminium in drinking water
- Iron and Manganese in raw water
- Microbial Activity / ATP in industrial and environmental applications
- Volatile Fatty Acids and Alkalinity in anaerobic digesters
- Alkalinity and Hardness in cooling cycles

Colorimetric Analyzer

ISE Analyzer

Titrator

Chemiluminescence Analyzer

Sample Preconditioning Panel

One Platform - Multiple Technology

Thanks to the versatile instrument platform, in many cases it will be possible to match the online analysis to your established laboratory method.

- Colorimetry
- Ion-selective electrode (ISE)
- Single and multi-parameter titration
- Voltammetry
- Chemiluminescence or respirometry

All EZ Series analyzers come in the same rugged mainframe with a compact footprint. Their common user interface on industrial panel PCs is easy to use and keeps training efforts low.

- EZ1000 Series : colorimetric analyzers
- EZ2000 Series : colorimetric analyzers with digestion
- EZ3000 Series : ion-selective analyzers
- EZ3500 Series: ion-selective analyzers with standard addition for complex matrices
- EZ4000 Series : single parameter titrators
- EZ5000 Series : multi parameter titrators
- EZ6000 Series : voltammetric trace metal analyzers
- EZ7000 Series: dedicated analyzers, e.g. for COD, TOC or Total Nitrogen + Total Phosphorus

Parameters

Hardness & Alkalinity

- Hardness (Total / Ca / Mg)
- Alkalinity (Free / Total)

Nutrients

- Ammonium
- Nitrate
- Nitrite
- Phosphate
- Total Nitrogen
- Total Phosphorus

Organics

- COD
- TOC
- Phenol
- Volatile Fatty Acids (VFA)

Special Parameters

- Adenosine Triphosphate (ATP) /
- Microbial Activity
- Toxicity
- Colour

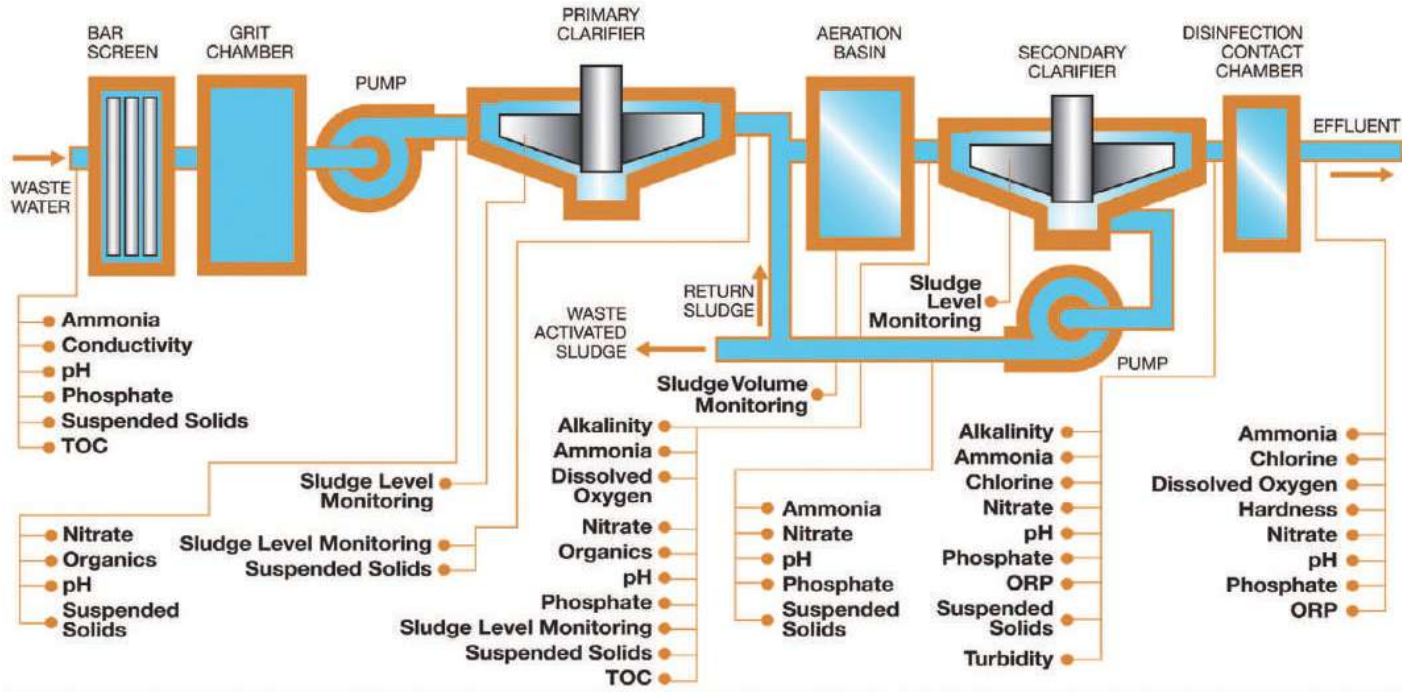
Inorganics

- Chloride
- Chlorine (high range)
- Cyanide
- Fluoride
- Hydrogen Peroxide (H2O2)
- Silica
- Sulfate
- Sulfide

Metals

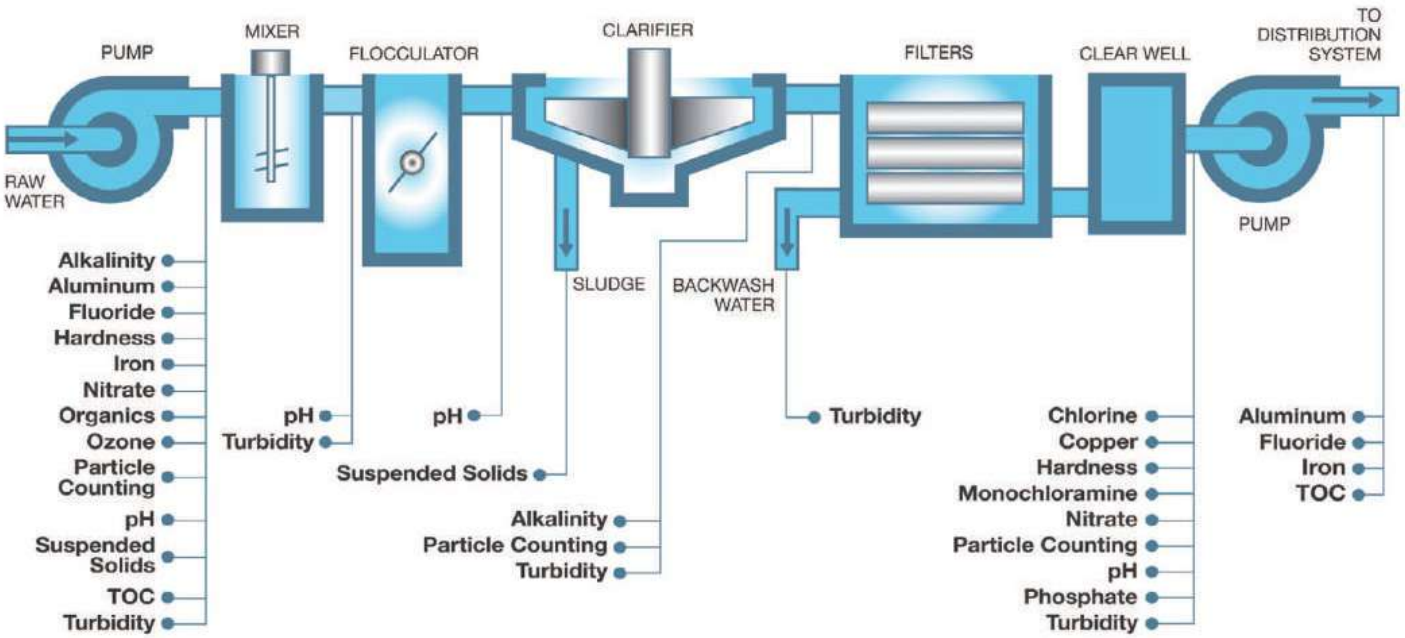
- Aluminium
- Arsenic
- Boron
- Chromium
- Copper
- Iron
- Manganese
- Zinc

Wastewater Treatment Flow Diagram



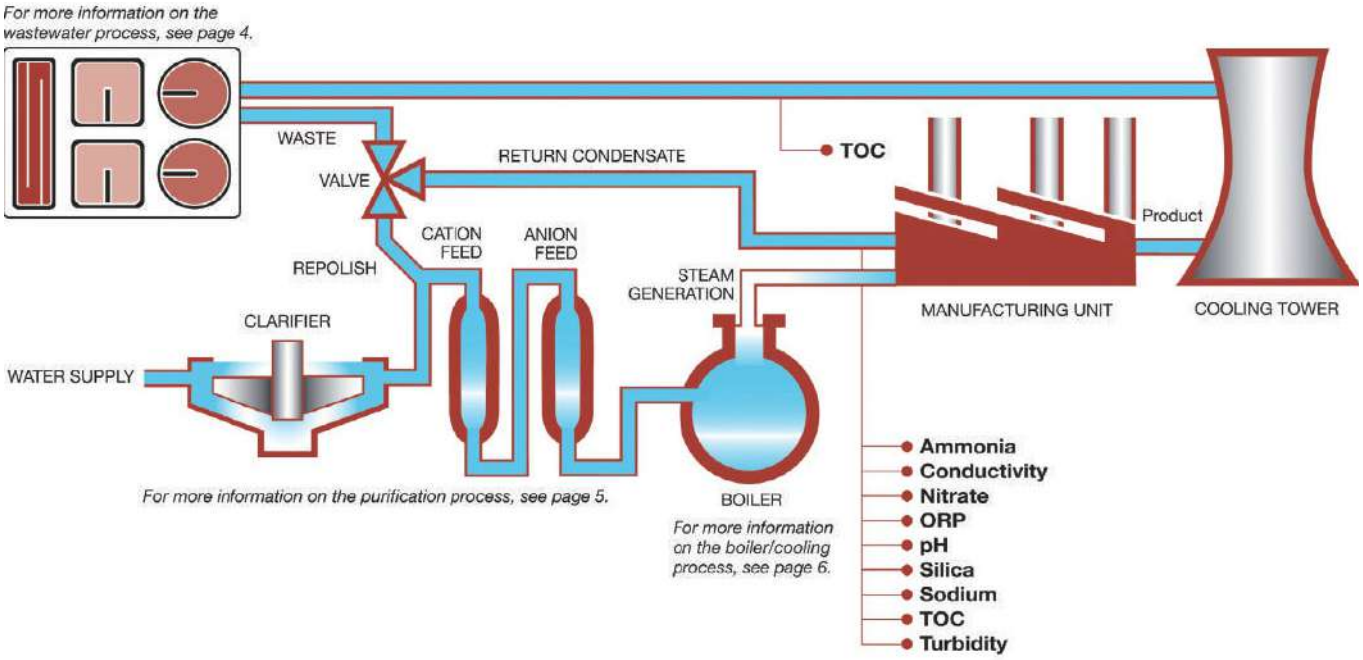
Parameters	Collection System	Influent	Primary Sedimentation Tank	Aeration Tank	Secondary Sedimentation Tank	Tertiary Treatment	Disinfection	Nutrients Removal	Digestion Tank	Sludge	Effluent	Online Analyzers & Instruments	Laboratory and Portable Instruments	Test Kits
Alkalinity		•	•	•	•			•		•	•		•	•
Ammonia		•	•	•	•	•	•	•			•	•	•	•
BOD		•		•							•		•	
Chlorine							•				•	•	•	•
COD		•									•		•	
Conductivity		•	•	•	•			•			•	•	•	
Dissolved Oxygen	•			•	•	•		•	•	•	•	•	•	
Total Coliform				•	•		•			•	•		•	•
Fecal Coliform				•	•		•			•	•		•	•
Flow Rate	•	•	•	•	•	•	•	•	•	•	•	•		
Hardness		•	•	•	•			•		•	•		•	•
Metal	•			•				•			•		•	•
Nitrate				•	•	•		•			•	•	•	•
Nitrite													•	
Nitrogen				•	•	•		•			•		•	
Organics		•		•	•	•					•	•		
ORP	•		•	•		•	•	•	•		•	•	•	
Ozone						•	•					•	•	•
pH	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Phosphates								•				•	•	
Total Phosphorous											•		•	•
Suspended Solids	•	•	•	•	•	•		•	•	•	•	•	•	
Turbidity		•		•	•	•					•	•	•	

Drinking Water Treatment Flow Diagram



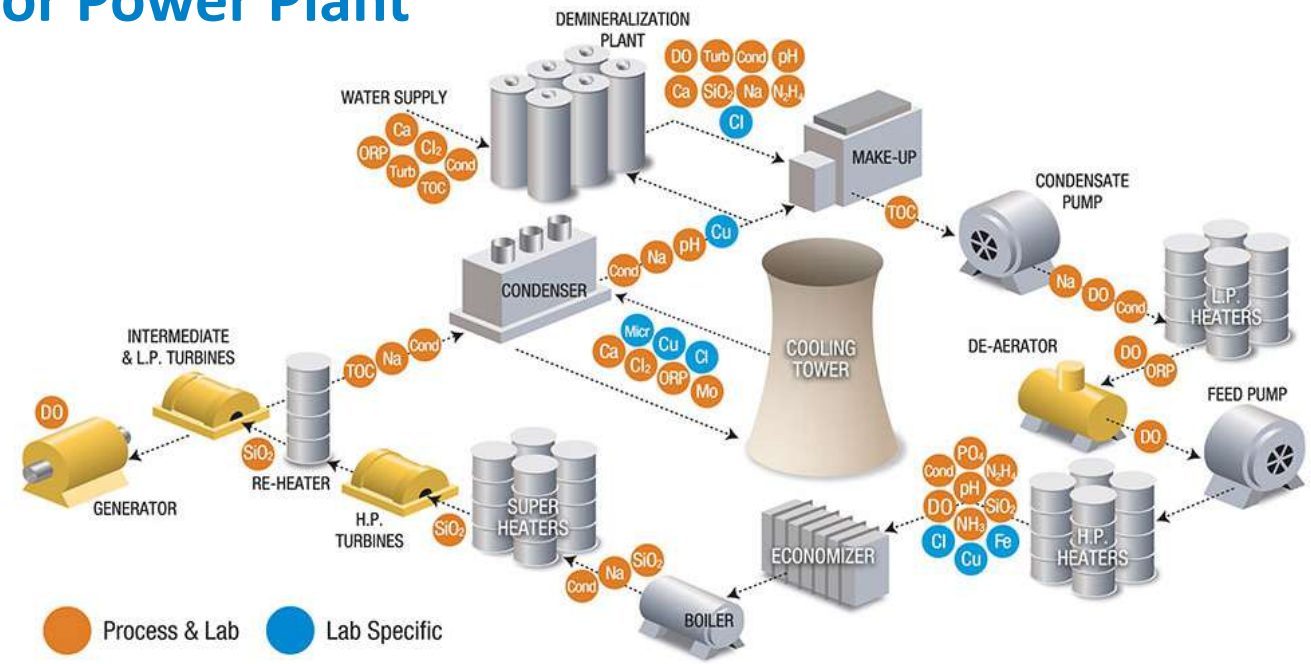
Parameter	Raw Water / Inlet	Particle Removal	Filter Inlet	Filter / Membrane Outlet	Clear Well	Outlet	Distribution	Online Sensors and Instruments	Laboratory and Portable Instruments	Test Kit
Alkalinity (P&T)	•		•			•	•	•	•	•
Aluminum	•		•	•		•	•		•	•
Ammonia	•					•	•	•	•	•
Chlorine	•			•	•	•	•	•	•	•
Conductivity	•					•	•	•	•	
Copper	•					•	•		•	•
Dissolved Oxygen	•		•				•	•	•	•
Fluoride	•						•	•	•	•
Hardness (T&Ca)	•					•	•	•	•	•
Iron	•				•	•	•		•	•
Manganese	•				•	•	•		•	•
MonoChloride	•				•	•	•	•	•	•
Nitrate	•			•	•	•		•	•	•
Organics (UV254)	•							•	•	•
ORP	•							•	•	•
Ozone	•	•	•	•				•	•	
Particle counter	•		•		•	•		•	•	
pH	•	•	•		•	•	•	•	•	•
Phosphate	•					•	•	•	•	•
Sludge	•							•		
Sulfate	•								•	•
Suspendid solids	•							•	•	
TOC	•					•	•	•		
Turbidity	•	•	•	•	•	•	•	•	•	

Industrial Water Flow Diagram

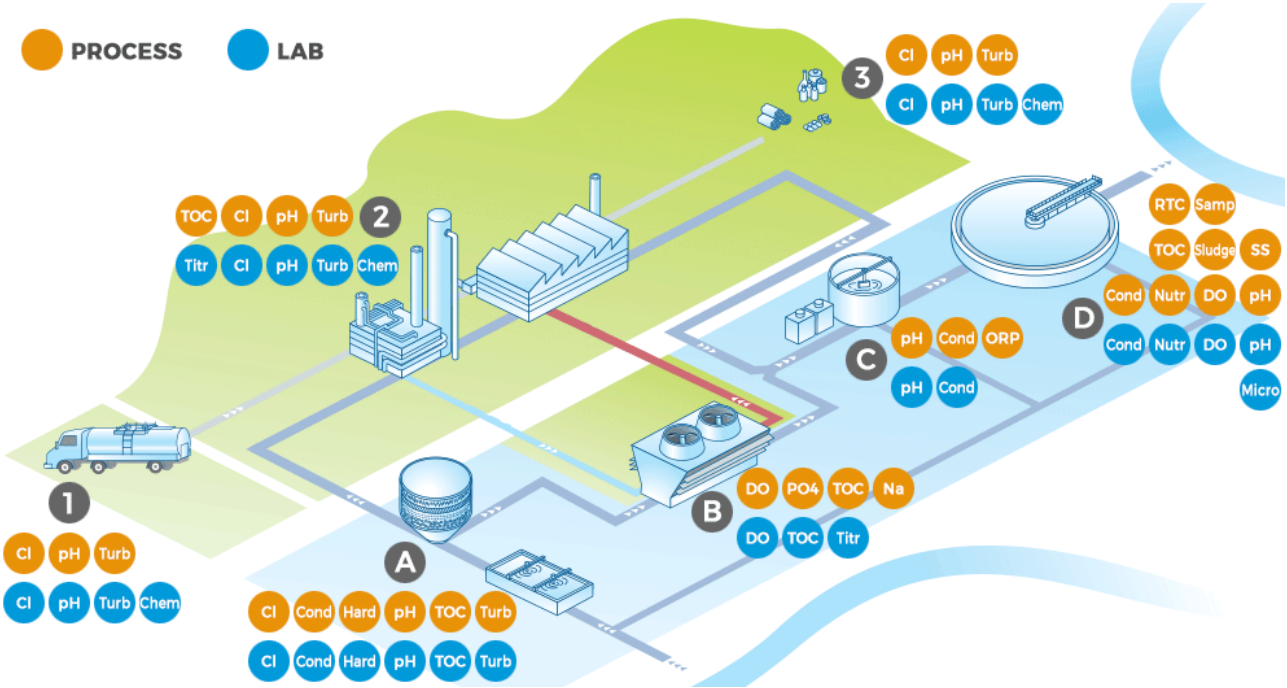


Parameter	Online sensors and analyzers	Laboratory and portable analyzers	Test kits and test stripes	Reagent
Alkalinity	•	•	•	•
Ammonia	•	•	•	•
BOD		•		•
COD		•	•	•
Chloride		•	•	•
Chlorine	•	•	•	•
Chlorine dioxide	•	•	•	•
Conductivity	•	•	•	•
Copper	•	•	•	•
Dissolved oxygen	•	•	•	•
Flow rate & Auto sampler	•			
Hardness	•	•	•	•
Iron		•	•	•
Aluminum		•	•	•
Germ culture		•	•	•
Molybdate		•	•	•
Monochloramine	•	•		•
Nitrate	•	•	•	•
Nitrite		•		•
Nitrogen		•	•	•
Organics (UV254)	•	•	•	
Ozone	•	•	•	•
pH/ORP	•	•	•	•
Deoxidant	•	•	•	•
Phosphorous	•	•	•	•
Silica	•	•	•	•
Sodium	•	•		•
Sulfate		•	•	•
TOC	•	•		•
Turbidity & Suspended solids	•	•	•	•

Key Measurement Parameters For Power Plant



Key Measurement Parameters For Food Plant

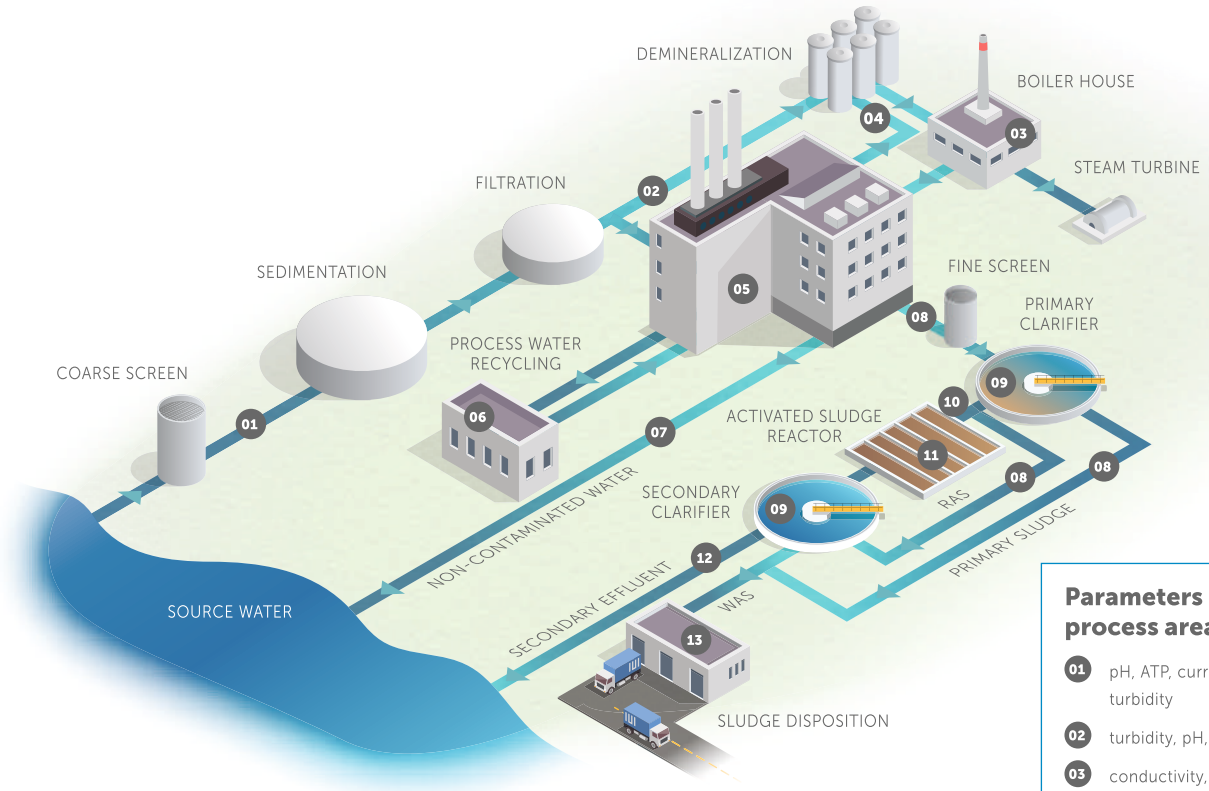


1. Delivery of Stocks
2. Production
3. Dispatch

A. Water Conditioning and Treatment
B. Steam/Power Generation and Cooling

C. Neutralization
D. Biological Wastewater Treatment

Complete Hach Solutions by Parameter for Industrial Water Treatment



Water Supply Conditioning

- ATP
- Color
- Chlorine, free and total
- Chlorine Dioxide
- Conductivity / Total Dissolved Solids (TDS)
- Dissolved Oxygen
- Hardness / Alkalinity
- Iron
- Manganese
- pH
- Silica
- Streaming Current
- Total Nitrogen (TN)
- Total Organic Carbon (TOC)
- Total Phosphorus (TP)
- Turbidity and Suspended Solids (TSS)

Steam & Power

- Conductivity
- Dissolved Oxygen
- Hydrazine / Oxygen Scavenger
- Laser Turbidity / Iron Transport
- pH
- Phosphate
- Silica
- Sodium
- Total Nitrogen (TN)
- Total Organic Carbon (TOC)
- Total Phosphorus (TP)

Paper Machine Wet End Operations Monitoring

- ATP
- Chlorine, free and total
- Conductivity / Total Dissolved Solids (TDS)
- Dissolved Oxygen
- Hardness
- ORP
- Laser Turbidity / Iron Transport
- pH
- Sulfate
- Total Nitrogen (TN)
- Total Organic Carbon (TOC)
- Total Phosphorus (TP)
- Turbidity and Suspended Solids (TSS)

Wastewater Treatment

- Absorbance UV
- Ammonia
- ATP
- Biochemical Oxygen Demand (BOD)
- Conductivity / Total Dissolved Solids (TDS)
- Dissolved Oxygen
- Flow
- Nitrate
- Nitrite
- Oil in Water
- ORP
- pH
- Phosphate
- Sludge Level
- Total Nitrogen (TN)
- Total Organic Carbon (TOC)
- Total Phosphorus (TP)
- Turbidity and Suspended Solids (TSS)

Parameters by process area

01 pH, ATP, current streaming, turbidity

02 turbidity, pH, Cl2

03 conductivity, sodium, silica, DO, phosphate, hydrazine

04 conductivity, silica

05 pH, solids, ATP

06 pH, solids, RTC-DAF

07 oil in water, conductivity

08 solids

09 sludge level

10 UV254, TN, TOC, TP, solids, COD, BOD

11 DO, solids, ORP, ATP

12 phosphate, ammonia, nitrate, nitrite, total inorganic nitrogen, solids, pH, RTC-DOS, TN, TOC, TP, COD, BOD

13 solids, pH, RTC-SD