

Water Quality Testing Product Guide

Instruments and consumables for measuring
and monitoring water quality



Water Quality

Regulatory authorities routinely revise guidelines to ensure physical , chemical, and biological characteristics of water remain suitable for purpose. Drinking water, ground water, water for swimming, and wastewater are ascribed different requirements and tests to ensure suitable levels of turbidity, salinity, BOD, COD, and other contaminants.

Antylia Scientific™ / Environmental Express® have a wide portfolio of instruments and consumables for measuring and monitoring water quality.



Environmental Express® instruments and consumables offer accurate and reliable water quality monitoring - from sample collection, preparation to testing

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Reliable water quality testing
you can trust

Turbidity Testing

Suspended solids, algae, organic and inorganic contaminants, and even air bubbles from treatment system affect the relative clarity of water. The Maximum Contaminant Level is set by local regulatory authorities and measures in Nephelometric Turbidity Unit (NTU). Test water turbidity of your samples in the lab or in the field with our calibrated devices.

1: Environmental Express® Oakton® T-100IR Portable Infrared Turbidity Meter Kit

- Suitable for sample solutions with rapid settling and continuous measurement changes
- Auto-ranging from 0 to 1000 NTU / Accuracy across entire range
- Stores up to 200 sets of data
- Suitable for lab & field-based use
- Features five calibration points (standards included)
- Normal and continuous measurement modes; automatically generate average, max & min values

2: Environmental Express® Oakton® T-100WL Portable White Light Turbidity Meter Kit

- Suitable for lab and field-based use - IP67 water resistance
- Auto-ranging from 0 to 1000 NTU / Accuracy across entire range
- Features five calibration points (standards included)
- Normal & continuous measurement modes; automatically generate average, max & min values
- Large TFT color screen, with changing background colours for ease-of-use
- Operation guides for easy calibration and measurement.
- Stores up to 200 sets of data
- Built-in USB interface for convenient data transfer to your PC



Environmental Express® Oakton® T-100IR
Portable Infrared Turbidity Meter Kit



Environmental Express® Oakton® T-100WL
Portable White Light Turbidity Meter Kit

Dissolved Oxygen (DO) Testing

Dissolved oxygen (DO) or the level of free, non-compound oxygen present in water is an important parameter for assessing water quality because of the influence it has on aquatic life. Modern techniques for measuring DO involve the use of electrochemical or optical sensors, either attached to a handheld or bench-top meter for spot sampling and laboratory applications, or to a data logger, process monitor or transmitter for deployed measurements and process control.

3: Environmental Express® Oakton® DO260 Dissolved Oxygen Meter Kit

- Accurately measures dissolved oxygen and temperature
- Auto-hold, auto-stable, & real-time measurements with stability and electrode status indicators
- Robust, waterproof, and dustproof - IP67 rated for lab and field-based use
- Self-diagnostic function - for quick troubleshooting of meter issues
- Stores 500 data points
- 500 hours of battery life - prolonged with auto shut-off feature
- Available with 2m or 5m cable

4: Environmental Express® Oakton® DO350 Smart Handheld Meter Kit

- Same as above but in addition:
- Suitable for lab and field-based use; IP67 rated waterproof and dustproof
- Stores 1000 data points
- Built-in USB and phone jack printer connections



Environmental Express® Oakton® DO250 Dissolved Oxygen Meter Kit



Environmental Express® Oakton® DO260 Dissolved Oxygen Meter Kit

Dissolved Oxygen (DO) Testing

5: Environmental Express® Oakton® DO350 Smart Handheld Meter Kit

- Same as above but in addition:
- Smart sensor technology for automatic sensor recognition
- Easy-to-use, waterproof, push-lock sensor head
- Suitable for lab and field-based use
- Built-in micro-USB and wireless Wi-Fi connectivity

6: Environmental Express® Oakton® Benchtop DO 2700 Meter

- Accurately measures dissolved oxygen
- Precision across a wide range of measurements - adjustable temperature coefficient and selectable cell constant
- Programmable functions - datalogging intervals, alarms, and password protection
- Stores up to 500 data sets
- NIST-Traceable Calibration, GLP - compliant readings - all data time/date stamped
- Built in RS-232 port for simple data export to PC; RS-232 to USB adapter can be leveraged for versatile connectivity



Environmental Express® Oakton® DO350 Smart Handheld Dissolved Oxygen Meter Kit



Environmental Express® Oakton® Benchtop CON 2700 Meter

Chemical Oxygen Demand (COD) Testing

Determine organic waste levels in your water sample with Chemical Oxygen Demand (COD) tests. COD is an integral part of all water quality management programs; used for measuring treatment plant efficiencies.

7: Environmental Express® COD Reagent Vials

- Pre-filled reagent vials for consistent and accurate analysis
- Suitable for low-, standard-, and ultra-high-range detection
- Compatible with multiple systems
- Glass vials, 16 mm x 100 mm
- EPA-approved and mercury-free options available

8: Environmental Express® HotBlock® COD Reactor

- Process up to fifty-six samples (two analytical batches) in a single run
- Pre-programmed for standard COD digestions, adjustable for other reactions
- Maintains setpoint of $\pm 0.1^{\circ}\text{C}$ and sample consistency of $\pm 1.5^{\circ}\text{C}$
- Displays actual and set-point temperatures simultaneously

9: Environmental Express® COD Standard

- Primary standard grade potassium hydrogen phthalate
- Available in 1,000 and 10,000 ppm concentration
- Delivered with an SDS
- Minimum 8-month shelf life (refrigerated)
- Approved for US EPA and mercury-free vial



Environmental Express® COD Reagent Vials



Environmental Express® HotBlock® COD Reactor



COD Standard

Biochemical Oxygen Demand (BOD) Testing

Biochemical Oxygen Demand (BOD) represents the rate of oxygen depletion by microorganisms under aerobic conditions at specified temperatures. Dissolved oxygen is critical for both aquatic life and the aesthetic quality of streams and lakes. It is often used as an index of organic pollution as well as wastewater treatment efficiency.

10: Environmental Express® Disposable BOD Bottle

- Lightweight, unbreakable, and recyclable BOD bottles (300-mL)
- Specially formulated carbon-coating prevents oxygen from diffusing in or out of samples
- Ready-to-use - pre-cleaned
- 100 bottles per case
- Individually numbered and barcoded - better sample traceability
- Laboratory tested and EPA method approved

11: Environmental Express® SimpleWater BOD Nutrient Buffer Solution

- Concentrated nutrient solutions needed for bacterial growth media for BOD tests
- Available in five standard concentrations to make a volume of 300 mL to 19 L
- Borosilicate glass vials with leakproof screw caps
- Available in pack of 36



Environmental Express® Disposable BOD Bottles



Environmental Express® SimpleWater BOD
Nutrient Buffer Solution

Biochemical Oxygen Demand (BOD) Testing

12: Environmental Express® Glucose-Glutamic Acid (GGA)

- Stable, certified, single-use GGA test preparations
- APHA specified concentration of GGA
- Ready-to-use – each 6mL vial poured directly into BOD bottles - no pipetting needed
- 24-month shelf life

13: InterLab PolySeed® Microbial BOD Capsules

- Special blend of microbial cultures for BOD analysis
- Provides consistent results from one analytical batch to the next
- 50 capsules per pack



Environmental Express®
Glucose-Glutamic Acid (GGA)



InterLab PolySeed® Microbial
BOD Capsules

Solids Testing

Solids content is an essential marker for water quality - effecting the energetics of moving water and impacting aquatic organisms. **Total Suspended Solids (TSS)** tests measure the particles in a water that can be separated using a filter while **Total Dissolved Solids (TDS)** measures the amount of dissolved organic and inorganic substances present in their molecular, inoised, or colloidal form.

14: Environmental Express® ProWeigh® and ProWeigh® Double Filters

- Ready-to-use - individually prepared, weighed, and labelled
- Suitable for total and volatile suspended solids testing
- Laser cut and quality controlled - accurate and precise weights
- Approved for Standard Methods 2540

15: Environmental Express® Washed and Dried Glass Fibre Filters

- Binderless, borosilicate glass filters with 1.5 µm pore size
- Each filter is laser cut to ensure a clean, sealed, fibre-free edge
- Withstands high temperatures up to 550°C
- Washed and Dried as per Standard Methods 2540
- 100 filters per pack



Environmental Express® ProWeigh® and ProWeigh® Double Filters



Environmental Express® Washed and Dried Glass Fibre Filters

Solids Testing

16: Environmental Express® StableWeigh® Start-Up Kit

- Pre-treated, pre-weighed, single-use components
- Constructed from lightweight, inert, heat-resistant material
- Prepared, weighed and individually marked vessels
- Washed and dried filters
- Compliant with SM 2540, ASTM D5907, BS EN 15216:2007
- Cools quickly & requires fewer drying & weighing cycles
- Kit includes vessels and filters for 100 samples, a weighing stand, a carrier/oven rack, a filling station, and a static control system

17: Environmental Express® StableWeigh® TDS Hot Block

- Suitable for Total Solids (TS) or Total Dissolved Solids (TDS) analysis
- Unique design facilitates thorough evaporation of liquids at a temperature below boiling
- Processes 24 samples simultaneously
- Compliant with SM 2540, ASTM D5907, BS EN 15216:2007

18: Environmental Express® StableWeigh® Vessels and Filters Kit

- Pre-treated, pre-weighed single-use components- reduces preparation time and improves throughput
- Compliant with SM 2540, ASTM D5907, BS EN 15216:2007 methods



Environmental Express TDS222
StableWeigh Start-Up Kit



Environmental Express StableWeigh
TDS Weighing Vessel Filling Stations



Environmental Express StableWeigh
TDS Vessels and Filters

Oil & Grease (HEM- Hexane Extractable Materials)

Oil and grease are extracted from acidified water using n-Hexane. The two main components extracted by HEM are “nonpolar materials” and fatty compounds of animal or vegetable origin. It is important to perform this test within defined parameters; with the most important consideration being the choice of extraction - either a liquid-liquid or an SPE extraction using n-Hexane as the solvent.

19: Environmental Express® StepSaver™ Oil and Grease Extraction System

- Compact, easy-to-use single-place station with a small footprint
- Quick and easy clean up with minimal risk of cross-contamination
- Choice of glass funnel or single-use funnels with mounted SPE disks
- Meets EPA method 1664 requirements
- Individual units can be daisy-chained together to increase testing throughput
- Available in multiple configurations - disposable filter funnel with UltraPrep® or UltraFlow® extraction disk, 47 mm, and 90 mm glass filter funnel

20: Environmental Express® Oil and Grease Extraction Disks

- Improve recovery - built-in pre-filter speeds up filtration & prevents disk from clogging
- Choice of UltraFlow® C18, or UltraPrep® Preactivated C-18
- UltraLow C-18 Extraction Disks without a pre-filter available - reduce n-Hexane use by up to 30%
- UltraPrep® preactivated C-18 discs - removed need for additional solvent and eliminates risk of contact with co-solvent
- EPA method 1664 compliant



Environmental Express® StepSaver™ Oil and Grease Extraction System



Environmental Express® Oil and Grease Extraction Disks

Oil & Grease (HEM- Hexane Extractable Materials)

21: Environmental Express® Snip & Pour® Standards

- Ready-to-use, pre-measured, pre-packaged reagents for HEM testing
- Single-use tubes deliver the precise volume of hexadecane and stearic acid for method compliance
- Quality checked gravimetrically and by GC
- All standards come with a CoA, with lot number, expiration date, & MSDS
- Meets EPA Method 1664 requirements

22: Environmental Express® QuickVap® Evaporating System

- Single system for both flask and pan analysis methods
- Versatile system - quick and effective with adjustable vessel configuration, temperature, and airflow controls
- Evaporate n-hexane quickly and effectively by adjusting temperature, airflow, and vessel configuration
- Digital controller - accurate temperature maintenance



Environmental Express® Snip & Pour® Standards



Environmental Express® QuickVap®
Evaporating System

Metals Digestion and Testing

For accurate detection of heavy metals contamination in soil and water, clean and safe sample preparation is crucial. With our suite of metals digestion solutions, you can collect, prepare, and test samples with ease and confidence. Samples are broken down to their elemental form using acid and heat, and then filtered to remove undigested particles before analysis.

23: Environmental Express® HotBlock® Digestion Systems

- Made from PTFE-coated graphite and other non-metallic materials - eliminates corrosion and cross-contamination
- Uniform heat distribution
- Set point accuracy of $\pm 0.1^{\circ}\text{C}$ and sample temperature consistency of $\pm 1.5^{\circ}\text{C}$
- SafeSample® alarm - sounds an audible alarm and cuts power to the heater mat in the event of a runaway temperature situation
- Available in different footprints that can accommodate a variety of sample volume sizes
- EPA method approved

24: Environmental Express® AutoBlock® Plus Digestion System

- Automated sample preparation for metals digestion - accurately dispenses reagents using Masterflex® peristaltic pumping technology
- Heats and cools samples in a self-contained HEPA filtered environment
- Easy-to-use - intuitive software
- Increase throughput - digests up to 54 samples simultaneously
- Compact; fits in your fume hood or free up valuable hood space



Environmental Express® HotBlock® Digestion Systems



Environmental Express® AutoBlock® Plus Digestion System

Metals Digestion and Testing

25: Environmental Express® Digestion Cups - Ultimate Cup

- Single-use cups for sample collection, storage, and metals digestion
- CoA for low-levels of 68 elements --the industry's cleanest resin
- Certified for volume accuracy of 0.5%.
- EPA approved for metals digestions
- Available in packs of 500



Environmental Express® Digestion Cups
- Ultimate Cup

26: Environmental Express® Single- and Multi-Element Standards

- Reliable - come with a Certificate of Analysis including an impurities scan.
- Certified by ICP-MS or ICP-OES to levels below parts-per-billion
- ISO 9001:2015 registered and ISO 17034:2016 and ISO/IEC 17025:2017 accredited
- Multi-element standards are available in a variety of matrices
- Order custom blends in volume from 50 mL to 100 L



Environmental Express® Single- and
Multi-Element Standards

27: Environmental Express® GhostWipe® Dust Sampling Wipes

- Premoistened, ready-to-use surface sample collection wipes
- Wipes breakdown completely and do not clog equipment
- Compliant with ASTM E 1792 for lead or beryllium testing



Environmental Express® GhostWipe®
Dust Sampling Wipes

Sample Filtration

Sample preparation often requires filtration to separate suspended solids, remove impurities, microorganisms, or other chemicals that may interfere with the final analytical procedures, and to determine chemical speciation and trace elements for studies.

28: Environmental Express® FlipMate Filtration Systems

- Convenient and economical - collect & filter sample in seconds using two threaded digestion cups
- Kits include digestion cups and filtration assemblies
- Available as a complete system in two sizes that accommodate 100 mL & 50 mL digestion cups

29: Environmental Express® FlipMate Vacuum Manifold

- Convenient - filter up to 12 samples simultaneously
- Compatible with both 50mL and 100mL FlipMate devices
- Resistant to most acids and other common laboratory chemicals
- Precise vacuum control
- Multiple manifolds can be connected to the same pump

30: Environmental Express® FilterMate Systems

- Convenient - filter 15- and 50- mL samples within sample cups, without a transfer step
- Simple-to-use- press on plunger for filtration, no need for separate filtration devices
- Available in PE, PTFE, PVDF/PTFE, and glass fiber filters
- Certified versions come with a lot Certificate of Analysis
- Available in packs of 100 filter assemblies and 100 plungers



Environmental Express® FlipMate Filtration Systems



Environmental Express® FlipMate Vacuum Manifold



Environmental Express® FilterMate Systems

Electrochemical Analysis

Electrochemical methods are applied in the analysis of trace element in the environment. With suitable sensors, we can measure multiple parameters, such as conductivity, salinity, voltage and more in environmental samples, to understand the bio-geo-chemical composition and processes involved. Electrochemistry has long been leveraged in environmental protection; it can also be used to improve existing technology, and contribute towards research, development, and implementation of new applications.

31: Environmental Express® Oakton® Multiparameter Smart Handheld Meters - 300 Series

- Accurate, precise, and easy-to-use
- Auto-hold, auto-stable, and real-time measurements with stability indicators
- Smart sensor technology with built-in digital circuit for automatic recognition
- Nonslip ergonomic design; shock-proof and scratch-resistant
- Rugged, waterproof, and dustproof housing
- Storage or up to 10,000 data sets with date-and-time stamp
- Quickly data transfer via USB or Wi-Fi

32: Environmental Express® Oakton® Handheld Meters - 250 and 260 Series

- Accurate, precise, and easy-to-use
- Auto-hold, auto-stable, and real-time measurements with stability indicators
- Electrode status indicator, which shows the condition of the electrode after each calibration, reading stability, measured parameter, and temperature on one screen
- Self-diagnosing; displays issues for fast fault finding and troubleshooting
- The 250 series feature 500 data points. The 260 series features 1000 data points
- USB communication



Environmental Express® Oakton® Multiparameter Smart Handheld Meters - 300 Series



Environmental Express® Oakton® Handheld Meters - 250 and 260 Series

Nutrient Testing

Nutrient contamination can significantly contribute towards water pollution. With an overabundance of nutrients, lakes become polluted with excessive algae. Decomposing algae blooms reduce dissolved oxygen and suffocate aquatic life. Additionally, some algae even produce toxins that can be harmful to humans and animals if ingested. Testing for Nitrate, Nitrite, and Phosphate is extremely important for monitoring nutrient levels in aquatic environments.

31: Environmental Express® HotBlock® TKN Digestion Systems

- Flexibility of digestion temperature --heats samples to 450°C
- Programmable ramp temperature and hold times that meet your digestion needs - up to 20 steps can be incorporated into each digestion procedure.
- Corrosion resistant - temperature block, tube rack, and cooling rack are encased in 316 stainless steel
- Includes Block, tube rack and cooling rack are encased in 316 stainless steel; corrosion-resistant
- Available with flat-bottom or round-bottom glass tubes for digestion



Environmental Express® HotBlock®
TKN Digestion Systems

Distillation Analysis

To broaden the array of pollutants that can be determined in environmental samples, distillation methods can be used to concentrate, recover and identify many volatile organic compounds.

32: Environmental Express® SimpleDist® Distillation Systems

- Safe and easy - optimal for performing cyanide and ammonia distillations
- Unique design replaces much of the fragile glassware usually involved in such procedures
- Compliant with EPA methods 335.4 and 350.1, and Standard Methods 4500-CN-C and 4500-NH3
- Complete system, including all parts needed for analysis

33: Environmental Express® SimpleDist® Micro Heating Block

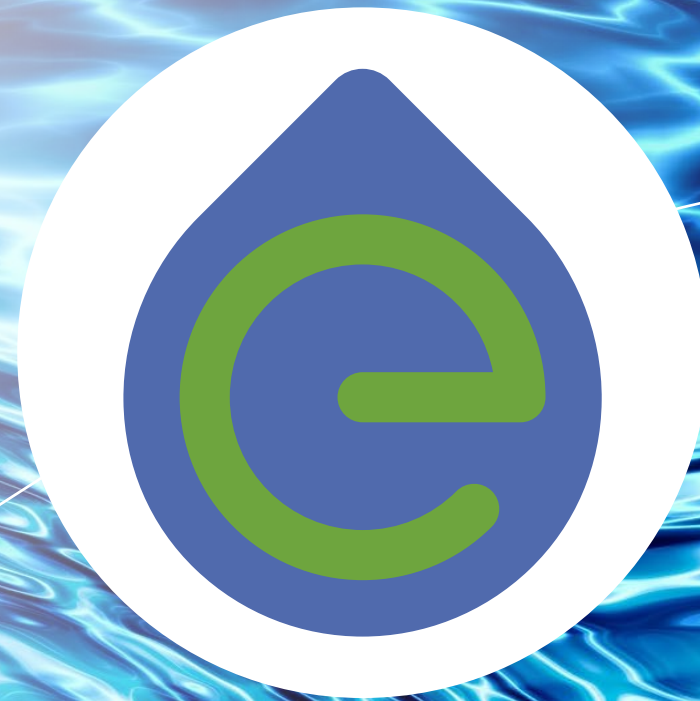
- Quick, easy, and safe - everything is done in the micro tube
- High-throughput unit - distils 26 samples simultaneously
- Saves time and reduces waste - requires only 6 mL of sample
- Compliant with EPA approved methods for reporting of cyanide; can be adapted for ammonia and phenol



Environmental Express® SimpleDist®
Distillation Systems



Environmental Express® SimpleDist®
Micro Heating Block



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