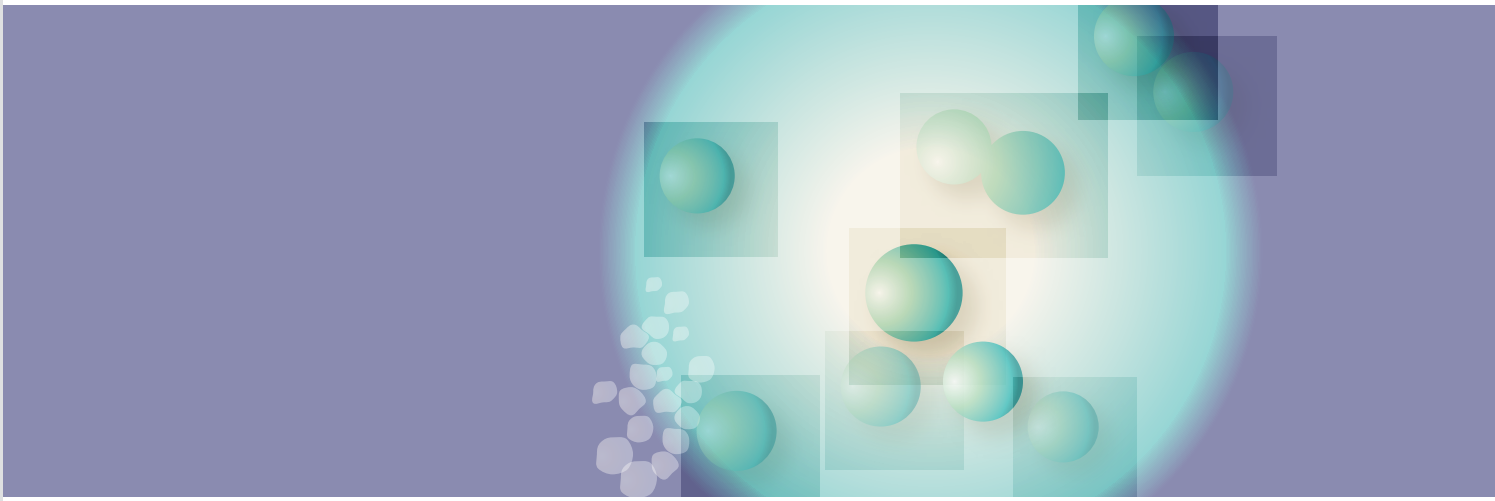
MODERNWATER | Toxicity



Toxicity monitoring technologies for on line, on location and the laboratory

MODERNWATER

Contents

Modern Water is expert in the design, development and provision of analytical instruments and technologies for monitoring toxicity in water, soil, food and industry. Our systems use bioluminescent bacteria to perform biosensor testing that detects the presence of toxic substances.

Our Microtox® M500 toxicity test system is the industry standard for laboratory-based rapid toxicity screening and analysis. DeltaTox® II is the portable, acute toxicity analyser used with the Microtox® technology. Modern Water's new* Microtox® CTM is a site-based, broad range Continuous Toxicity Monitor (CTM).

Our range of toxicity testing technologies is both industry-leading and ground-breaking.

** Patent-pending*

Laboratory Toxicity Testing with Microtox® M500

Microtox® M500

The Microtox® M500 analyser is a laboratory-based, temperature-controlled, self-calibrating photometer that measures acute toxicity.

With over 2,400 instruments sold worldwide, the Microtox® toxicity test system is the industry standard for rapid toxicity screening and analysis.

Microtox® is simply the Gold Standard

Microtox® M500

The technology and its applications

Microtox® rapid toxicity detection is an in vitro test system that uses bioluminescent bacteria for the detection of toxicity and is used as a screening system to detect the relative toxicity of a sample.

Applications include the testing of samples containing biological toxins, industrial effluent, industrial process waters, municipal effluent, drinking water, eco toxicological samples, hazardous waste, soil, sediments, storm water and chemical, pharmaceutical and medical products for bioactivity.

Microtox® M500 product features

- Test is sensitive to more than 2,700 different simple and complex chemicals
- Results available in as little as 15 minutes**
- Cost effective and easy to perform tests
- Complies with ISO 13348-3:2077 (luminescent bacteria test)

***after initial reagent preparation*

Portable Toxicity Testing with DeltaTox® II

DeltaTox® II portable toxicity monitor

DeltaTox® II is the portable toxicity analyser used with the Microtox® technology. It is a simple, rapid, extremely responsive, portable water quality test system.

DeltaTox® II uses bioluminescence technology to screen for both acute toxicity and microbial contamination (ATP method). Applications include drinking water emergencies and detection of chemical spills into water systems.

The portable DeltaTox® II detects both chemical and microbial contamination

DeltaTox® II

The technology and its applications

The DeltaTox® II instrument has a combined detection capability that provides a very sensitive and rapid test to detect two of the most probable classes of agents (pathogens and toxic chemicals) that may accidently or intentionally contaminate drinking water or wastewater. DeltaTox® II has acute toxicity and ATP detection capabilities that make it the ideal instrument for rapidly and accurately assessing if the quality of drinking water, from the source to the tap, has been affected by an incident.

DeltaTox® II is designed for use in any sample location throughout the water distribution or industrial waste water system. It is particularly suited to remote sites such as reservoirs, storage tanks, ocean or lake going vessels or in any hard to reach place. It is also used in screening of contaminated soil where the site history is not well understood.

DeltaTox® II product features

- Test is sensitive to more than 2,700 different simple and complex chemicals
- Results available in 5** minutes
- Microbial detection level in drinking water 100 cfu/mL
- Excellent correlation with HPC and GC methods
- Cost effective and fully portable

***after initial reagent preparation*

On-line Continuous Toxicity Monitor (CTM)

Microtox® CTM

Modern Water's new* Microtox® CTM is a site-based, broad range, Continuous Toxicity Monitor (CTM). It continuously measures the chemical toxicity of a water source, giving instant indication of water health.

Microtox® CTM is a fully automatic instrument that offers a 4-week, autonomous operating cycle and requires a low level of skill for both operation and maintenance.

** Patent-pending*

Microtox® CTM

The technology and its applications

Microtox® CTM has broad range detection capabilities that provide rapid early warning of contamination by several thousand known chemicals. This enables containment measures to be actioned in time to protect against serious contamination events. A major advantage over most analytical methods is that Microtox® CTM is able to detect contaminants whether or not there is prior knowledge of the potential source or nature of contamination.

Other on-line toxicity monitors take intermittent samples and provide only one test result in typically 15-30 minutes. This means that brief events may be missed and leads to a high incidence of false alarms. Microtox® CTM takes two measurements per second, significantly reducing the risk of false alarms.

Microtox® CTM product features

- Real-time and truly continuous monitoring
- 4-week, autonomous operating cycle
- No manual intervention except for monthly maintenance
- Automatic diagnosis of system faults
- Remote control, data analysis and troubleshooting
- Detects thousands of chemical compounds with lower levels of detection than most other biosensor systems
- Works in fresh, saline and chlorinated water
- User-definable toxicity alarm

The Microtox® CTM makes fully automatic, continuous, on-line testing a reality

Routine maintenance is essential to ensure a high level of performance for all analytical instruments.

Modern Water provides annual and routine maintenance, as well as emergency maintenance on all its analysers. We can also loan our customers Microtox® M500 and DeltaTox® II monitors whilst repairs or maintenance work is carried out on your existing monitor.

Microtox® CTM

Upon receipt of a technical support request from a customer, Modern Water can remotely access a Microtox® CTM monitor via the internet. The analyser function can then be checked by our trained staff by:

- Confirmation of system functions
- Identification of faults
- Initiate calibrations

This level of service saves our customers time and money. Downtime is kept to an absolute minimum and the need for onsite visits is reduced.

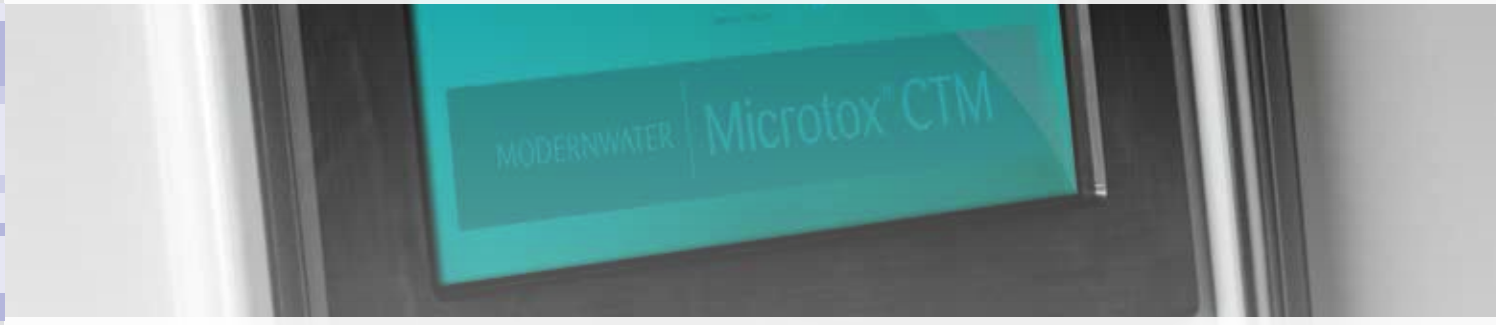
Technical Support

Working with you

Modern Water is experienced in a wide array of applications for toxicity monitoring. We will support you in finding the best test for your application and provide continuous support through our Technical and Customer Support teams.

Next steps:

1. Email us at info@modernwater.co.uk
2. Discuss your application requirement with an experienced member of the Modern Water team
3. Determine which Modern Water Toxicity Monitoring product best fits your needs
4. Confirmation of order, delivery and installation.



Specifications

MICROTOX® M500 SPECIFICATIONS

Size	183 x 391 x 412mm (H x W x D)
Weight	9.5kg (21lbs)
Power	100 +/- 10% VAC, 2 Amp Slo Blo, 50/60 Hz 120 +/- 10% VAC, 2 Amp Slo Blo, 50/60 Hz 220 +/- 10% VAC, 1 Amp Slo Blo, 50/60 Hz 240 +/- 10% VAC, 1 Amp Slo Blo, 50/60 Hz
Room Temperature Requirement	15°C to 30°C
Temperature	REAGENT well 5.5°C ± 1°C Acute Mode Incubator block 15°C ± 0.5°C READ well 15°C ± 1.0°C Mutatox/Chronic Mode Incubator block 27°C ± 0.5°C READ well 27°C ± 1.0°C

MICROTOX® OMNI SOFTWARE PROTOCOLS

Provided with purchase of Microtox® M500 analyser	ASTM (D5660) Basic toxicity test Comparison test Confirmation test ISO (International Standard Organization 11348-3) DIN (Deutsches Institut fur Normung 38412 Teil Test) Screening toxicity test Solid Phase/Basic Solid Phase Comparison Confirmation WET (Whole Effluent Toxicity)

Specifications continued...

DELTATOX® II SPECIFICATIONS

Size	200 x 180 x 10mm (H x W x D)
Weight	1 kg (2.2 lbs)
Power	Self-contained Lithium ion battery or a universal power adapter (15V dc @ 4 amps)
Instrument Operational Temp	0°C - 40°C
Reagent Operational Temp	10°C - 35°C
Display Output	Backlight LCD - 8 lines x 20 characters
Data I/O	Standard serial USB for data transfer and firmware updates
Data Storage	6.5k byte storage area (approx. 600 reads)
Data Handling	Stand alone or download capability to PC; built in software prompts operational steps, records light measurements and automatically calculates results for immediate review and further analysis
Test Reagent	Freeze-dried Luciferin luciferase
Toxicity Reagent Storage	Freeze-dried -15°C to -25°C Rehydrated: 2 hours (ambient temperature)
ATP Reagent Storage	Refrigerate 2 - 8°C
Test Modes	Toxicity (Q-Tox and B-Tox) and ATP measurement
Test Measurement Criterion	Light output by test reagent measured after timed exposure to a sample
Results Display	Toxicity test: Percentage light loss or gain Microbial (ATP) test: Total light output (photon count)

MICROTOX® CTM SPECIFICATIONS

Sample Requirement	150 mL/h at ambient pressure
Sample Temperature	5 - 30 °C
Electrical	230V 50Hz AC 480W (or local equivalent)
Display	Colour 180mm diagonal, touch sensitive
Communications	Ethernet, USB port for data download
Communications Options	4 - 20 mA, 2 relay alarm outputs, GPRS modem
Consumables	Supplied freeze dried and vacuum packed for reconstitution on site. Suitable for 4 weeks operation
Auto Calibration Interval	User settable between 3 and 24 hours
Standard	5 mg/L zinc
Waste Volume	120 L/month – non-toxic, suitable for soak away
Autosampler	Takes samples on positive alarm (optional)
Weight	70kg (approx.)
Dimensions (main enclosure)	1675 x 750 x 365mm (H x W x D)
Housing	Aluminium
Maintenance	Typically 2 hours per month
Mounting	Wall or floor
Optional	Pre-filtration

To find out how we can help you please contact us on:

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