

## CONTINUOUS TOXICITY MONITORING

Modern Water's Microtox<sup>®</sup> 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<sup>®</sup> 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.

Microtox<sup>®</sup> CTM makes fully automatic, continuous, on-line testing a reality. It 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<sup>®</sup> CTM is able to detect a broad-range of contaminants whether or not there is prior knowledge of the potential source 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 or lead to a high incidence of false negatives. Microtox<sup>®</sup> CTM takes two measurements per second, significantly reducing the risk of missed events.



- » Automatic diagnosis and reporting of system faults
- » Remote data analysis and troubleshooting
- » Real-time and truly continuous monitoring
- » 4-week, autonomous operating cycle
- » No manual intervention except for monthly maintenance
- » Detects thousands of chemical compounds with lower levels of detection than most other biosensor systems

# PROCESS EXPLAINED

Biosensor tests using bioluminescent bacteria have been in use for 30 years and their capability in detecting toxic substances is well understood. They make use of a strain of bacteria that emits light when healthy and when exposed to toxic substances, the amount of light emitted reduces. The greater the toxicity of the sample, the lower the light emitted.

Measuring changes in light between healthy bacteria and bacteria exposed to toxic substances will therefore indicate the presence of toxicity in a water sample, whether from a single substance or a combination. Existing tests are off-line or intermittent and require high levels of skilled operator intervention, unlike Microtox® CTM.

## SPECIFICATIONS

Sample Requirement	100 – 200 ml/min at ambient pressure
Sample Temperature	5 – 35°C
Ambient Temperature	5 – 40°C with A/C option
Power Supply	100/240V, 50–60Hz AC, 480W
Display	Colour, 180mm diagonal, touch sensitive
Communications	Ethernet, USB port for data download
Communications Options	4–20 mA, 2 relay alarm output, GPRS modem, Wifi network, LAN
Consumables	Supplied frozen immediate use on site or storage at -22°C. Suitable for 4 weeks operation
Auto Calibration Interval	User settable between 3 and 24 hours
Standard	5 mg/L zinc ion from zinc sulphate or customer specified
Waste Volume	120 l/month – non-toxic, suitable for soak away
Autosampler	Takes samples on positive alarm (optional)
Weight	70kg (approx.)
Dimensions: Main Enclosure	1250 x 750 x 365 mm (H x W x D)
Control Panel	425 x 750 x 365 mm (H x W x D)
Housing	Aluminium
Maintenance	Typically 2 hours per month
Mounting	Wall or floor
Optional	Pre-filtration, A/C option
Certification	CE, RoHS and WEEE

## APPLICATIONS

- » Deliberate and accidental contamination events
- » Water intake protection
- » Potable water at point of use or in the distribution network
- » Monitoring of rivers, lakes, reservoirs, seawater, groundwater/ natural attenuation
- » Effluent monitoring for discharge
- » Recycled water

## WHAT IT DETECTS

Microtox® CTM automatically and simultaneously detects a broad range of toxins including: metals, pesticides, fungicides, herbicides, chlorinated solvents, industrial chemicals. CTM also responds to synergistic toxicity events. This enables the detection of harmful contaminants in waters without the need for an extensive suite of time consuming and expensive tests.

