

Microtox®

*The Global Standard in Acute Toxicity Testing**Proven • Trusted • Cost-Effective*

Modern Water's Microtox technology is a biological early warning system sensitive to more than 2,700 simple and complex chemicals. Microtox systems protect water supplies from accidental or deliberate chemical contamination. It remains the standard for acute toxicity testing for water. Microtox provides laboratories, municipal drinking water and wastewater facilities, regulatory agencies, research organizations, and industrial customers with proven, cost-effective technology to protect water supplies, ensure compliance with regulatory standards, and conduct environmental research.

How Microtox Technology Delivers Rapid, Highly Accurate Results

Biological monitoring techniques play an increasingly important role in the evaluation of acute toxicity. Biosensors using bioluminescent bacteria have been in use for over 30 years. Modern Water developed Microtox technology to address the limitations of conventional bioassay toxicity analysis.

Due to its simplicity, speed, economics, convenience, and reproducibility, Microtox has become one of the most recognized bioassays in the world today. Unlike conventional tests that can take up to 96 hours and are subject to manual counting, Microtox can provide highly accurate results in less than 1 hour.

The Microtox system uses a proprietary strain of bioluminescent bacteria, *Aliivibrio fischeri*, naturally found in the light organ of the Hawaiian Bobtail squid. Upon exposure to a substance or sample containing toxic materials, changes in the bacteria's light output are measured by the Microtox LX or FX instrument's luminometer. The greater the reduction in light emitted by the bacteria, the greater the toxicity of the sample.



Modern Water produces Microtox reagents that are manufactured using a rigorous production process that ensures the *Aliivibrio fischeri* bacteria is highly sensitive. Each test sample is exposed to over 10^6 Microtox bioluminescent bacteria. The company maintains a proprietary quality

control process to ensure the bacteria is highly consistent from lot to lot. Microtox LX and Microtox FX analyzers are designed specifically for use only with Modern Water's bioluminescent bacteria.

Microtox Benefits

- Numerous independent, peer-reviewed studies have demonstrated the Microtox toxicity test results have a high degree of correlation with conventional bioassay tests such as fish, daphnia, and shrimp.
- Fast, Reliable, and Reproducible Results – Results Available in as little as 15 minutes after initial sample preparation.
- Proven – With over 650-peer reviewed and 3,000 instruments in use, scientific studies have documented Microtox's performance as an effective toxicity screening tool in a wide array of applications. No other commercially available bioassay for acute toxicity testing has a similar track record of documented performance.



- The Microtox assay has undergone verification by the US EPA's Environmental Technology Program. The Environmental Technology Verification (ETV) Program of the Environmental Protection Agency (EPA) in the United States develops testing protocols and verifies the performance of innovative environmental technologies that can address problems that threaten human health or the natural environment
- The Microtox® platform was awarded the Designation and Certification as an "Approved Product for Homeland Security" under the Support Anti-Terrorism by Fostering Effective Technologies Act of 2002 (the Safety Act) by the U.S. Department of Homeland Security.
- Total Solution - Modern Water is the only supplier of analytical equipment and reagents for acute toxicity testing. The Microtox LX and Microtox FX provide unparalleled performance when used with genuine Microtox reagents and consumables. In addition, the award-winning Microtox CTM provides 24/7 continuous monitoring for hazardous chemicals and compounds.



- Microtox analyzers, reagents, and consumables are manufactured in ISO: 9001 and And ISO 13485:2016 certified facilities.

SPECIAL OFFER:

MODERN WATER WILL SHIP ONE FREE BOTTLE OF DILUENT ON ORDERS of 3 BOXES OF MICROTOX ACUTE OR SOLO REAGENTS PLACED IN SEPTEMBER 2022

MARK YOUR ORDER WITH: **MICROTOX0922** TO QUALIFY FOR THIS OFFER

Only Microtox Reagents Are Manufactured Global Quality Standards

DeepVerge plc is pleased to announce that @ModernWater has achieved the ISO9001 certification for its Microtox manufacturing process at its York, UK facility. Microtox reagents are now the only acute toxicity reagents manufactured in an ISO9001 quality system. The administration systems of Modern Water at the York facility have been assessed and approved by QAS International and are deemed experts in the technology for monitoring toxicity in water and soil.

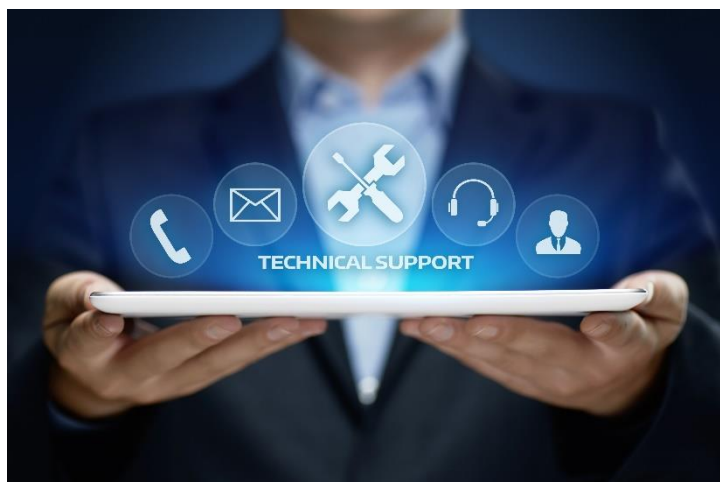
Microtox Helps Water Professionals Meet Global Regulatory Standards

Modern Water's Microtox® products are designed to make water analysis better, from plant to the lab to field, giving you total confidence in the quality of your water. That's why drinking, wastewater, and industrial customers worldwide rely on Microtox reagents to make decisions on the safety of their water. A few of the regulatory standards where Microtox reagents are used to confirm compliance are shown below:

Newsletter (E-Zine)

- Canada, Alberta Energy Regulator, Directive 050: Drilling Waste Management (August 2019)
- Mexico, Mexican Standard: NOM-001-SEMARNAT-2021 Water and Sediment Analysis – Acute Toxicity Evaluation with *Vibrio fischeri* – Test Method
- Spain, International Standard Organization, ISO 11348-3: Water quality – Determination of the inhibitory effect of water samples on the light emission of *Vibrio fischeri* (Luminescent bacteria test) Part 3: Method using freeze-dried bacteria
- Italy, International Standard Organization, ISO 11348-3: Water quality – Determination of the inhibitory effect of water samples on the light emission of *Vibrio fischeri* (Luminescent bacteria test) Part 3: method using freeze-dried bacteria
- Taiwan, Environmental Protection Agency, NIEA B301.10C: Determination of the acute toxicity – luminescent bacteria test

Global Service and Support Backed By Deepverge



Modern Water has offices in North America, Europe, Japan, and the UK. In addition, the company’s network of highly experienced distribution partners ensures that Microtox products are supported and serviced globally. Regional suppliers with limited track records simply cannot match this superior level of customer support.

Global Manufacturing Capability

As well as distributing the Microtox product, Modern Water has manufactured Microtox reagents for over 30 years. In 2020, the company expanded production of Microtox to a its facility in York, UK. Dual location manufacturing offers the following benefits:

- **Faster Delivery** – With two manufacturing centers strategically based in North America and the UK,, Modern Water can move products at a faster pace and reduce delivery times.
- **Lower Transportation Costs** – With shorter distances, the cost of delivering products can significantly decrease. Transit times are cut down when you ship from a location closer to your buyer. Less time on the road for your shipping partners means more money in your pocket.

Newsletter (E-Zine)

- Minimal Risk – Spreading stock also mitigates risk. This is particularly crucial when circumstances such as inclement weather, pandemics or the need for a rush delivery come into play. By having multiple inventory across three warehouses, you can prevent delayed deliveries due to distance, weather or disruptions to supply chains.

Working with a company that manufactures products in multiple locations with a multi-location supply chain will not only save you time and money, but minimize supply chain risk.

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