

aquaBio

Automatic product for the determination of *Escherichia coli* and total coliforms

The *Escherichia coli* and total coliform parameters are key and essential indicators for determining possible uses and reuse of the water.

RD1620/2007, which sets the legal basis for reusing treated water requires controlling *Escherichia coli* and depending on its concentration, defines the allowed uses for the water that is regenerated.

In addition, directive 2006/7/CE relative to the management of the quality of bath water classifies the quality of this resource according to several parameters, where the determination of the presence of *Escherichia coli* is an important factor.

aquaBio is especially designed for determining the total *Escherichia coli* and coliforms in water, which makes it an optimum tool for water monitoring according to its use.

STRUCTURE

- Hydraulic and fluid management system.
- Thermostatic measuring chamber that includes the bucket where the incubation and measurement of the sample is conducted optically.
- Multi- λ optic measuring system.
- Software and electronics capable of controlling the system and managing the data.

OPERATION

Measurement Principle

The measurement principle is based on DST® (defined substrate technology), with an alternate fluorescence and absorbance detection system.

Defined Substrate Technology

aquaBio uses reagent Colilert-18® (*) based on defined substrate technology (DST®) for the detection of total coliforms and *Escherichia coli*.

The coliforms use the β -galactosidase to metabolise ONPG and generate a yellow colour in the medium.

Escherichia coli, also uses β -glucuronidase to metabolise MUG and generate fluorescence.

The determination of *E. coli* as well as total coliforms is based on the correlation that exists between the concentration of bacteria and the time when the fluorescence and/or the colour appears.

The sensitivity of the system allows detecting concentrations of 108 NMP after 3 hours.

Disinfection of the System

The independence between samples is assured by an adequate hydraulic and mechanical management of the system, avoiding contamination between the different samples.



ADASA

INNOVATIVE SOLUTIONS
FOR WATER & ENVIRONMENT



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NOTEWORTHY CHARACTERISTICS

Simultaneous measurement of *Escherichia coli* and total coliforms.

- Calculating the NMP in 3 h for waters that are highly contaminated.
- Low maintenance.
The system only requires maintenance every 15 days. These quarterly tasks are limited to replacing reagents and a monthly semi-automatic cleaning and replacement of a consumable part.
- Programming the equipment.
aquaBio is programmable and allows carrying out daily analysis at the same time or consecutively, providing a graphic display of the accumulated values.
- Transmission to the control centre.
The data may be transmitted to a control centre automatically for analysis and use. Furthermore, aquaBio operates the results and sends alarms to other equipments (ie. aquaMostra, the automatic sampling equipment) or to additional water monitoring networks.



GENERAL CHARACTERISTICS

Measurement principle:	Fluorimetric detection for <i>Escherichia coli</i> Colorimetric detection for total coliforms
Reagents used:	Colilert-18® (*) from IDEXX in liquid form Cleaning solution
Detection limit:	<i>Escherichia coli</i> : 1 bacteria in 100 ml Total coliforms: 1 bacteria in 100 ml
Temperature regulation:	± 0.1 °C
Analysis time:	from 3 to 18 hours, depending on the concentration
Electrical power:	110 - 230 VAC/50-60 Hz
Communications:	RS-232 port and RS-485 port MOD-BUS or ASCII protocol Analogue output 0-10 V/4-20 mA Alphanumeric terminal graph in colour Data extraction program via PC
Alarms:	Two alarms, which may be upgraded to four Relay output
Dimensions:	105 x 70 x 42 cm



(*) Colilert-18® is a registered trademark. The reagent liquid form has been developed by Adasa, without IDEXX validation.

Adasa reserves the right to modify the technical features.



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All ADASA products are designed and manufactured according to the highest standards of quality:

ISO 9001 Quality Management
UNE 166002:2006 R&D and innovation Management
ISO 14001 Environmental Management
OHSAS 18001 Health and Safety