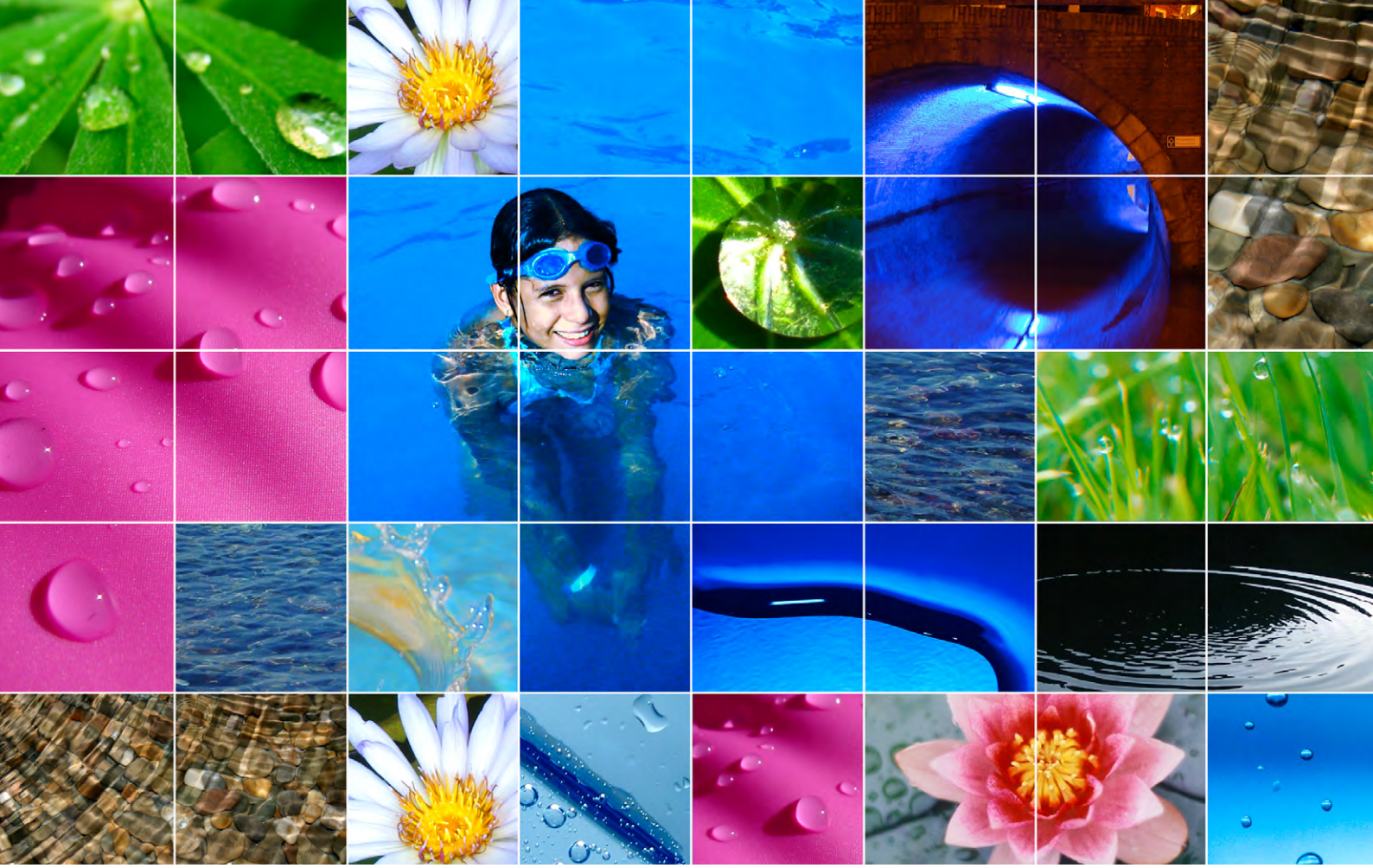


QG21W™
Fast MicroBiological Kit for Aerobic and Anaerobic Biomass

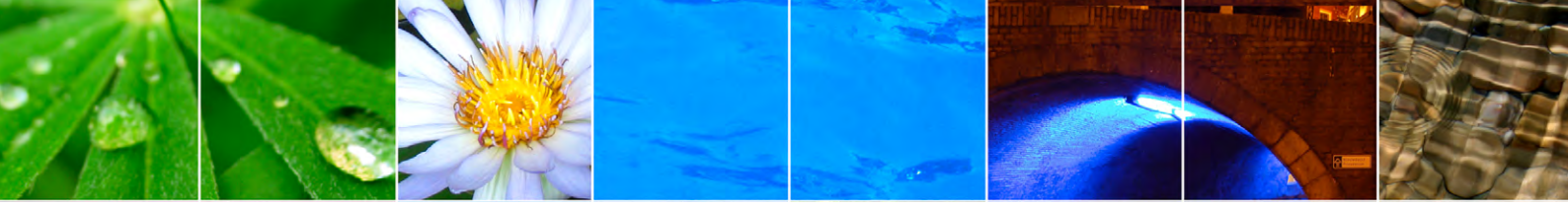
MEASUREMENT OF TOTAL FLORA BY ATP G2

APPLICATIONS

- → Wastewater treatment plant (WWTP)
- → Activated sludge
- → Aerobic, anaerobic, anoxic reactors
- → Lagoons
- → Membrane bioreactors, UASB reactors
- → Anaerobic digestion
- → Bio-fermentation
- → Composting
- → On-site sewage facilities
- → Rehabilitation of soil

26, rue Charles-Édouard Jeanneret
78300 Poissy – France
Phone: +33 1 39 75 02 20
Fax: +33 1 39 75 08 28
contact@aqua-tools.com
www.aqua-tools.com

aqua-tools



WHAT DOES ATP 2G

The **QG21W G2 refill kit** – 2nd generation ATP-metry – is the only one allowing **interference-free** quantification of all living microorganisms in samples as complex as **chemical products heavily loaded in total suspended solids (TSS)**such as industrial process water.

It's a **Total Flora indicator**. It accounts for all living organisms present, isn't influenced by inorganic particulates, provides accurate bacteria counts, and detects bacteria considered to be unculturable. Adenosine triphosphate 5ATP) is the energy source of any living organisms. ATP G2 analysis is an **effective tool in monitoring Microorganisms in water** and ATP testing detects **all metabolically active cells** in the sample. These kits are new alternative methods from culture plate counting, for more reactivity.

TECHNOLOGY

Adenosine Triphosphate (ATP) is the main energy carrier for all living cells. Its concentration is measured by the **QG21W** kit via a reaction of bioluminescence: ATP, in contact with a complex of luciferin/luciferase, reacts to produce light measured by a luminometer. Results delivered in RLU are converted in pg ATP/mL or in Equivalent Microorganisms/mL using a **standard ATP solution**, **UltraCheck™ 1**, in order to provide reliable quantitative results over time. The QG21W kit measures the following parameters in complex chemical samples:

- **Total A**TP (tATP™) which is the sum of intracellular and extracellular ATP.
- **Extracellular ATP or dissolved ATP (dATP™)** which is ATP present outside living cells and rejected by dead microorganisms.

From these measurements, the following monitoring parameters are calculated:

- **Intracellular ATP (cATP™)** which is ATP contained within living microorganisms, directly linked to their concentration: cATP = tATP – dATP.
- **Biomass stress index (BSI™)** which represents the microorganisms stress or mortality **BSI (%) = dATP/tATP**. This index is used in toxicity studies of tinfluents or in bioreactors.
- **Ratio of active biomass (ABR™)** which represents the percentage of active biomass among total suspended material in the bioreactor: **ABR (%) = (cATP (ng/mL) x 0.5) / MES (mg/L).** Maximizing this parameter enhances the quality of activated sludge.

RECOMMENDATIONS

The video demonstrations, material safety data sheets (MSDS) and more information about applications of the QG21W test kit are available on the internet website www.aqua-tools.com.

CREATE YOUR MicrobialBoxTool

The **QG21W kit** allows quantifying microbial flora and monitoring the **biological process of wastewater treatment more precisely**:

- Optimization of aeration regulations measuring their impact on the biomass, and reduction in energetic costs.
- Optimization of recirculation flows in function of the living/dead biomass ratio.
- Early detection of toxics and inhibitors via quantification of microbial stress in routine analyses, particularly when industries are connected to the sewerage system.
- Optimization of biomass growth factors and quantities of used bioadditives.

The **QG21W kit** allows operating and optimizing the biological process of **anaerobic digestion**:

- Detection of toxics for anaerobic reactions.
- Monitoring of the digester load increase through the realisation of tests similar to the BMP test (Biochemical Methane Potential).

STRONG POINTS

- Quick measurement **(results in 5 minutes)**
- Fieldwork possible for more reactivity
- Quantification of all microorganisms
- Low priced analysis
- Results in **ng ATP/mL** or in **Equivalent Microorganisms/mL**

ADDED VALUE OF ATP G2

- **F**aster measure
- More representative Sample from 1 up to 100 ml
- A stronger Lysis solution in order to extract 99.99 % of microbial ATP
- Chemical reagent to minimize inhibitor of bioluminescence
- Quantification of any microorganims
- Faster, economic analysis – excellent alternative tool

LUMINOMETER

QG21W and PhotonMaster are a trademark from LuminUltra (Canada)

aqua-tools