INDUSTRY
& ENVIRONMENT

QG21Speciality

Innovative Technology

Rapid Microbial Detection in minutes

APPLICATIONS

- → Polymers, Latex
- → Industrial mixtures
- → Additives
- → Paints
- → Glue
- → Adhesives
- → ED Coating

MEASUREMENT BY ATP 2G©

RECOMMENDATIONS

Video demonstration and more information about applications of the QG21 S kit are available on **www.aqua-tools.com**

contact@aqua-tools.com
www.aqua-tools.com

aqua-tools

What does ATP 2G©?

The **QG21S 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)**. It directly measures the concentration and health of microorganisms in **paints, adhesives, coatings, additives and industrial mixtures**.

Quantitative ATP-metry is recommended for **microbial risk monitoring** as a biological tool of water quality assessment.
It's a **biological indicator tool**. It accounts for all living organisms present, isn't influenced by inorganic particulates, provides accurate microorganisms counts, and detects bacteria considered to be unculturable.
Adenosine triphosphate (ATP) is the energy source of any living organisms. ATP 2G© analysis is an **effective tool in monitoring microorganisms** and detects **all metabolically active cells** in the sample. This kit is new alternative method.

Technology

Adenosine Triphosphate (ATP) is the main energy carrier for all living cells. Its concentration is measured by the **QG21S** 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 QG21S kit measures the following parameters in complex chemical samples:

- **Total ATP (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**.

QG21S test kits are available in two formats:

- **QG21S Standard** (QG21S) provides materials to perform 50 analyses each of tATP and dATP. This provides the most accurate indication of living microorganisms via cATP and allows computation of the BSI to assess microbial population health.
- **QG21S tATP only (QG21St™)** provides materials to perform 100 analyses of tATP. Use this kit when no differentiation between living and dead microbes is required.

Key benefits

Products such as **paints, coatings, adhesives, industrial mixtures** and additives, are all prone to significant **biodegradation issues if microbial growth** is not under control. The consequences of contaminated product can be severe (i.e. product recalls, lost time due to product re-working requirements, brand image damages, etc.).
The QG21S kit allows monitoring microbial contamination in samples from chemical products industry:

- **Control and handle microbial** contamination in real-time from raw material to finished products
- Early detect and prevent related damages such as degradation of finished products
- Assess in real-time the effectiveness of Biocide action
- Reduce the **number of time consuming culture** analyses

Strong points

- **Quick measurment** in minutes
- **Quantitative sample** transfer ensures accuracy
- **Higher volume analyzed** – More representative
- **Superior chemistry of reagent**s – higher ATP extract recovery
- **Optimized protocols** ensure minimal interferences (TDS, TSS, Oil, Biocides)
- **Liquid-stable ATP standard** (UltraCheck 1) converts RLU to quantitative concentration

Added value ATP 2G©

- **Account greatest number of microorganisms**
- **In an acceptable time frame**
- **At a reasonable cost**
- **More reliable, robust**
- **More reproductible and relevant**

Create your Microbial ToolBox

Reference method as culture plate count for water/fluid microbial control are directly link to the operator appreciation and quality of culture media used - variation of CFU count are more than 30 % for the same of culture media produced by different companies.

This means that **you can underestimate true level of microorganisms** in your sample – Microorganisms slow growing or **injured active** cells will be missed by the operator. Underestimation of microbial contamination could lead you to unappropriated and non-efficiency action plans.

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