Quick Reference Guide

QuenchGone21™ Specialty Test Kit

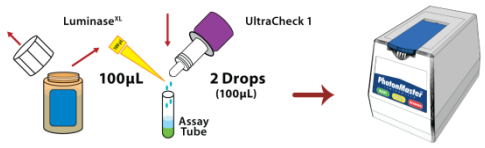
Product #: QG21S-50 / QG21St-100

NOTE: Please refer to Test Kit Instructions during first product use and for additional details including legal statements.

ISO 9001

Step 1 - UltraCheck™ 1 Calibration

Perform one UltraCheck 1 calibration per day or per each set of samples analyzed.



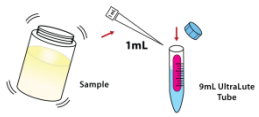
NOTE: If RLU_{ATP1} ≤ 50,000 using a PhotonMaster or Lumitester C-110, rehydrate a new bottle of Luminase XL for maximum sensitivity.

Step 2 – Total ATP (tATP™) Analysis (1 per sample)

Included in QG21S™ and QG21St test kits.

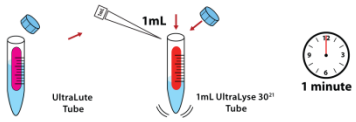
2.1 – PRE-DILUTION

Pre-dilute sample.



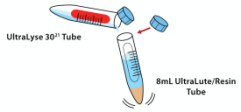
2.2 – EXTRACTION

Add pre-diluted sample to extract ATP.



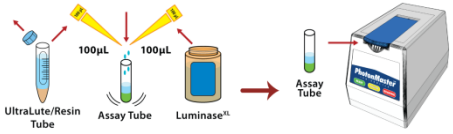
2.3 – DILUTION

Dilute out interferences.



2.4 – ASSAY

Measure ATP concentration.



NOTE: If RLU_{tATP} ≤ 10 using a PhotonMaster or Lumitester C-110, you are below the low- detection limit.

NOTE: If RLU_{tATP} ≤ 50 using a PhotonMaster or Lumitester C-110, consider accounting for background (RLU_{bg}). See Test Kit Instructions for guidance.

Total ATP (tATP) Calculation:

$$tATP\,(pg\ ATP/mL) = \frac{RLU_{tATP}}{RLU_{ATP1}} \times 100{,}000\,(pg\ ATP\,/\,mL)$$

Step 3 – Dissolved ATP (dATP™) Analysis (1 per sample)

Included in QG21S test kit only.

3.1 – DILUTION

Add pre-diluted sample to recover ATP.

3.2 – ASSAY

Measure ATP concentration.

NOTE: If RLU_{dATP} ≤ 10 using a PhotonMaster or Lumitester C-110, you are below the low-detection limit.

NOTE: If RLU_{dATP} ≤ 50 using a PhotonMaster or Lumitester C-110, considering accounting for background (RLU_{bg}). See Test Kit Instructions for guidance.

Dissolved ATP (dATP) Calculation:

$$dATP\,(pg\ ATP/mL) = \frac{RLU_{dATP}}{RLU_{ATP1}} \times 100{,}000\,(pg\ ATP\,/\,mL)$$

Calculations:

NOTE: When using the QG21S tATP – only kit, skip final calculations and interpret tATP results as you would cATP results using the Interpretation Guidelines.

NOTE: If the results show for a given sample that dATP (ng/mL) > tATP (ng/mL), report cATP™ = 0 and BSI™ = 100%

Cellular ATP (cATP) Calculation:

$$cATP\left(\frac{pg\ ATP}{mL}\right) = tATP\,(pg\ ATP\,/\,mL) - dATP\,(pg\ ATP/\,mL)$$

Microbial Equivalent (ME/mL) Calculation:

$$cATP\left(\frac{ME}{mL}\right) = cATP\,(pg\ ATP/mL) \times \frac{1\ ME}{0.001\ pg\ ATP}$$

Biomass Stress Index (BSI) Calculation:

$$BSI\ (\%) = \frac{dATP\ (pg\ ATP\ /mL)}{tATP\ \ (pg\ ATP\ /mL)} \times 100\%$$

NOTE: 1 ME (Microbial Equivalent) assumes 0.001 pg (1 fg) ATP per cell.

Interpretations Guidelines

Application	Good Control (pg cATP/mL)	Preventative Action (pg cATP/mL)	Corrective Action (pg cATP/mL)
Product Quality Control (Paint, Coating, Slurries)	< 100	100 to 1,000	> 1,000

For BSI (when applicable), it can generally be interpreted that good control is achieved at levels of 75% or above. Preventive action should be taken at levels between 50% and 75%, and corrective action should be taken at levels below 50%.

NOTE: Interpretation Guidelines provided for general guidance. For best results, establish your own baseline and control levels.