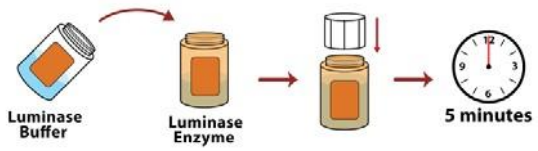
Test Kit Instructions

QuenchGone™ Organic Modified (QGO-M)

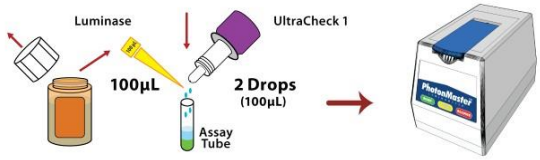
REHYDRATING LUMINASE

- Gently mix the buffer and **Luminase** enzyme**.**
- Wait 5 minutes for solution to dissolve.



1. ULTRACHECK CALIBRATION (RLU_{ATP1})

- Hold the UltraCheck1 bottle vertical, **add** 2 drops (100µL) of **UltraCheck1** to a 12x55mm test tube.
- Pipet 100µL of **Luminase** into the test tube**.**
- Swirl tube and take reading within 10 seconds.



***** If RLU_{ATP1} ≤ 5,000 rehydrate a new bottle of Luminase.

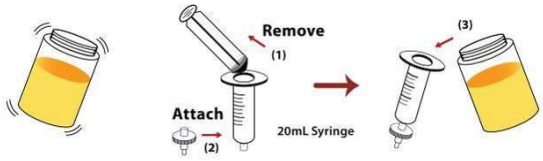
2. CELLULAR ATP ANALYSIS (RLU_{cATP})

2.1 FILTRATION

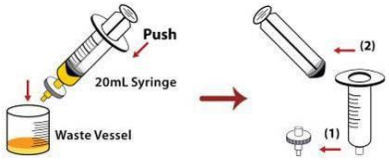
- Mix sample well.
- Remove the plunger from a 20mL syringe and attach the filter.
- Pour the recommended volume of sample into the syringe.

QGO-M Sample Volume Recommendations

Sample Type	Recommended Volume (mL)
Polymers, Admixtures, Personal or Home Care Products	1 (Diluted)
Metalworking Fluids, Fuel Associated Water, Crude Oil	1 to 5
Finished Fuel, Lubricants	10 to 20
Oilfield, Oily Brines	10 to 20

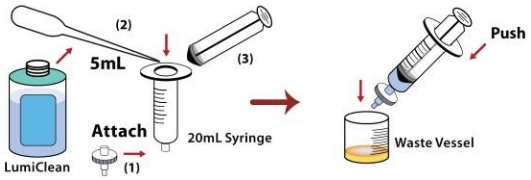


- Slowly push sample through the filter into waste.
- Detach the filter and remove the plunger.

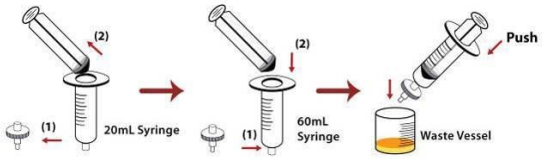


2.2 FILTER WASHING AND DRYING

- Re-attach the filter to the 20mL syringe barrel.
- Using a disposable bulb pipet, add 5mL of **LumiClean** to the syringe barrel and pass it slowly through the filter into a waste receptacle.



- Remove the plunger from a 60mL syringe.
- Detach the filter from the 20mL syringe and attach it to the 60mL syringe.
- Hold the syringe over the waste receptacle and push the plunger through the barrel to dry the filter.

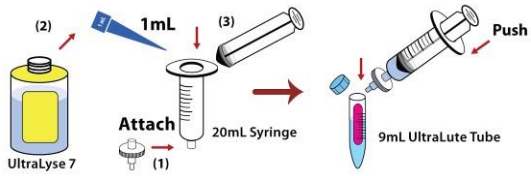


TIP: Replace the 60mL syringe after every 20 tests.

2.3 EXTRACTION

- Re-attach the filter to the 20mL syringe barrel.
- Add 1mL of **UltraLyse 7** to the barrel, pass it slowly through the filter and collect in a new **9mL UltraLute (Dilution) Tube**.

- Cap and invert three times to mix.



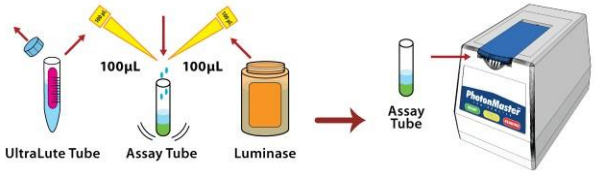
2.4 BACKGROUND MEASUREMENT

- Pipet 100µL of the **Luminase** into a new, clean 12x55mm test tube.
- Put the test tube with **Luminase** into your luminometer and take a reading.
- Record the reading as *Background RLU*. This reading should be below 20 RLU. This tube can then be used for your sample assay (Step 2.5).

TIP: If the results are above 20 RLU, this indicates that some external factors (light, contamination) may be influencing your results. LuminUltra offers cleaning kits for your luminometer. Please contact us to discuss

2.5 ASSAY

- Add 100µL of the **UltraLute (Dilution)** solution to a 12x55mm test tube with **Luminase** from Step 2.4.
- Use a new pipet tip to add 100µL of **Luminase** to the test tube.
- Mix the solution and take reading within 10 seconds.



Calculations

To automatically calculate ATP, use **LuminUltra Cloud**.

Cellular ATP (**cATP**) represents the amount of ATP contained within living cells and is a direct indication of total living biomass quantity.

$$cATP\ (pg\ ATP/mL) = \frac{RLU_{cATP}}{RLU_{ATP1}} \times \frac{10{,}000\ (pg\ ATP)}{V_{Sample}\ (mL)}$$

DATA INTERPRETATION GUIDELINES

Application	Good Control (pg cATP/mL)	Preventive Action (pg cATP/mL)	Corrective Action (pg cATP/mL)
Finished Fuels, Conventional Lubricants	<10	10 to 100	>100
Polymers, Admixtures, Personal Care, Home Care	<100	100 to 1000	>1000
Crude Oil, Fuel Associated Water, Oily Brines, Chemical Products, Oilfield Waters	<100	100 to 1,000	>1,000
Metalworking Fluids, Fire-Retardant Lubricants	<1,000	1,000 to 10,000	>10,000