

# Scigiene Hygiene Meter Evaluation Kit

For Comparing ATP Hygiene Monitoring Systems

Part Number: HMEK

## Overview

Adenosine triphosphate (ATP) hygiene monitoring systems detect levels of ATP from both microbial and non-microbial contamination on surfaces and liquid samples. The amount of ATP collected and read in systems is expressed in terms of relative light units (RLU). Variation in results between systems can be caused by the enzyme reagent formulation used to produce the bioluminescent reaction, the extractant pre-moistened on the swab bud, in the electronic calibration within the luminometer, and/or the variation in the sample being collected.

Understanding the correlation of ATP levels to RLU is important when comparing systems. Simple surface or water sampling comparisons can be highly variable due to sampling technique, surface type, sample type, and possible extreme variations in residue present in different areas on the same surface.

This Scigiene Hygiene Meter Evaluation Kit eliminates sampling error and provides a consistent and scientifically-based method for comparing systems by pipetting a stable consistent amount of ATP directly onto the tips of testing devices. This instruction sheet describes the procedure for comparing ATP Hygiene monitoring systems. If you have additional questions, please contact Scigiene.

## Materials Provided:

- (20) CleanTrust ATP tests
- 1 vial of freeze dried ATP (~100 femtomoles)
- Vial A 1 ml buffer
- Vial B & C 0.9ml buffer for serial dilutions
- (1) 10µL pipettor
- (50) pipette tips
- (2) sterile 0.1 ml transfer pipettes
- (1) Data Record Sheet

## Procedure

1. Setup – Remove the vial of Freeze dried ATP from the box. Add 1 ml of buffer (Vial A) to the ATP vial and recap and shake well.
2. It is helpful to wear latex or polyurethane gloves to prevent contamination.
3. Remove 10uL pipettor from bag. Leave pipette tips in bag or place them where they will not be contaminated. Place one pipette tip on the end of the pipettor. Be careful not to touch the tip of the pipette tip as this could contaminate the ATP standards. Allow CleanTrust Swabs and ATP test devices from other suppliers to come to room temperature and label them as required. Turn on CleanTrust ATP3500 and other test instrument. You are now ready to begin the comparison testing.
4. Take pipettor and pipette 10uL of ATP from vial B and pipette directly onto the tip of CleanTrust Swab and then activate as normal. Place in CleanTrust Luminometer and read. Record results on data record sheet. Repeat this step four more times using a clean fresh pipette tip for each aliquot sample tested. Record results.



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5. Repeat step 4 with **other** ATP meter.
6. Using sterile transfer pipette transfer 0.1 ml from Vial B to vial C
7. Repeat steps 4 & 5 using vial C
8. Using second sterile pipette transfer 0.1ml from vial C to vial D
9. Repeat steps 4 & 5 using vial D
10. **Vial C should now give 1/10 of vial B and vial D 1/100<sup>th</sup> of vial B**
11. The background of each test system is very important when comparing the performance and sensitivity of two systems. The background is determined by testing blank swabs i.e. CleanTrust swabs without any sample (or using sterile distilled water instead of ATP). Test 10 separate swabs and record the results for each. Do the same for the other ATP hygiene monitoring test system and its corresponding swab.
12. The sensitivity (limit of detection) of each system is calculated as:

$$\text{Limit of Detection} = \frac{\text{Average RLU of Blank} + 3(\text{standard deviation of blank})}{\text{Slope of ATP calibration curve}}$$

### ATP Concentration

The amounts of ATP provided in 10uL of standard:

**Vial C should now give 1/10 of vial B and vial D 1/100<sup>th</sup> of vial B**

### Results

When comparing RLU results you should look at background, sensitivity (limit of detection), repeatability and pass/fail correlation between the two systems.

Remember that:

- Results are displayed as Relative Light Units so each result is relative to the sample.
- High RLU does not mean more sensitivity
- Each instrument displays results differently, but what's important is that a fail is a fail and a pass is a pass.
- At the final dilution you will see the less sensitive meter giving no results or extremely erratic meaning they are only detecting background noise and not actual variance in ATP.

### Storage Requirements

Store HMEK components at refrigerated temperatures (2-8 °C) to assure their full shelf life.



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