

ATP Surface Swab

Instruction Manual
Product No.: YL1002

1. Description and Intended Use

ATP is the abbreviation of the chemical substance adenosine triphosphate. It is commonly found in all living cells including microorganisms. Its main function in the cell is to provide energy.

Based on the principle of firefly luminescence, the "luciferase-luciferin system" can be used to quickly detect the ATP content in the test environment, making it easier to monitor the hygienic status of the surface of processing equipment and other various industrial environments.

Under the catalysis of luciferase, ATP present in the sample reacts with luciferin to produce fluorescence, and the fluorescence intensity (RLU) is proportional to the ATP content. The higher the RLU value, the higher the ATP content and the dirtier the surface.

2. Product Composition

Composition	Quantity
YL1002 ATP Surface Swab	100 swabs
Instruction	1 copy
COA	1 copy

3. Applicable Instruments and Detection Sensitivity

Instrument Model	Detection Sensitivity
YZ3500 Luminometer	5*10 ⁻¹⁶ mol
YZ3500S Luminometer	5*10 ⁻¹⁶ mol

4. Important Tips and Notes Before Starting the Test

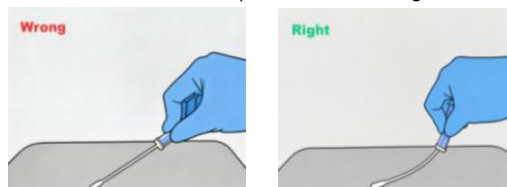
- 1) Allow the ATP Surface Swab to equilibrate to room temperature (20 °C–25 °C) before use.
- 2) The swab tip is pre-moistened for sample collection.
- 3) Visible condensation inside the swab tube is normal and does not affect test performance.
- 4) Turn on the Luminometer and place it on a stable, level surface before performing the test.
- 5) The ATP Surface Swabs are designed to detect invisible/trace amounts of residue. Overloading the swab with physical matter by swabbing a visibly dirty surface will inhibit the bioluminescent reaction and produce inaccurate results.
- 6) If there is excess liquid on the surface to be tested, allow it to dry slightly before sampling to avoid diluting the reagent (complete drying is not required).
- 7) For water samples, use ATP Water Swab.

5. Test Procedure

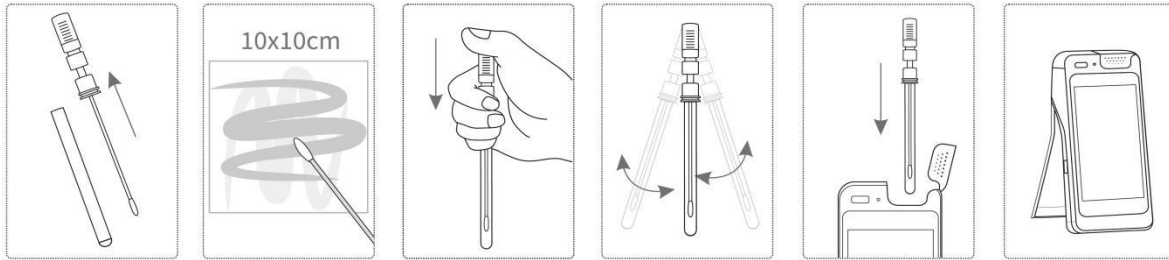
- 1) Turn on the instrument's power, and wait for the main interface to load. Tap on the Detection icon to enter the detection interface, set the threshold and the operator's name for future reference.
- 2) Before using the ATP surface swab, bring the swab to room temperature (20-25°C). Holding the swab tube firmly, twist and pull the top of the swab out of the tube (Do not pull out the swab directly!)
- 3) Remove the room temperature-equilibrated swab from its tube (pre-wetted design, no additional processing required). Hold the swab at a 45° angle to the surface and wipe the 10 × 10 cm area in a zigzag pattern. Repeat the wiping motion until the entire target area is fully sampled. For irregular surfaces, ensure that each control point is tested using the identical wiping protocol to guarantee result accuracy. Return the swab to its original tube.

Important swabbing technique tips:

- Do not touch the swab or the inside of the sample device with your fingers.
- Wipe the surface of the object evenly in a zigzag pattern, including vertically, horizontally, and diagonally in both directions.
- For irregular surfaces, maintain a consistent swabbing technique during each test; swab a large enough area to collect a representative sample.
- Rotate the swab while collecting the sample to maximize the amount of sample collected at the tip of the swab.
- Apply sufficient pressure to create flex in the swab shaft (As shown in the figure below).



- 4) Hold the swab tube firmly and press the bulb on the top of the swab to pierce the aluminum foil. Then, squeeze the bulb twice to expel all the liquid down the swab shaft.
- 5) Bathe the swab bud in the liquid by shaking for 10 seconds. Once activated, the sample must be read in the luminometer within 30 seconds.
- 6) Open the door of the detection chamber and immediately insert the swab vertically into the detection chamber. Close the door of the detection chamber. The luminometer will automatically perform the analysis program.
- 7) Please refer to the instrument manual for detailed operating instructions. In brief: when using the YZ3500 and YZ3500S luminometers, close the detection chamber. These luminometers will automatically recognize the swab, and the test result will be displayed on the screen after 10 seconds. If the automatic detection function fails, testing may be continued by clicking the retest button on the screen.
- 8) After detection is complete, open the door of the detection chamber, remove the swab and close the door.



6. Interpretation of Results

The ATP Surface Swabs are used with the YZ3500 and YZ3500S luminometers. These luminometers are pre-set with pass and fail RLU thresholds, and the results can be interpreted according to Table 1. Users are recommended to set the thresholds in accordance with the standards of their respective institutions or industries.

Table 1. Default RLU Threshold Settings of the Luminometer

Interpretation	YZ3500/YZ3500S Luminometer (RLUs) ^a
Pass (Clean)	0-20
Caution (Warning)	20-60
Fail (Dirty)	>60

a: These are factory default thresholds. Users may modify them as needed.

7. Storage and Shelf Life

2–8 °C, store away from light, valid for 12 months.

8. Safety and Precautions

- Do not use the product beyond its expiration date.
- ATP Surface Swabs are for one-time use. Do not reuse.
- Components of ATP Surface Swabs do not pose any health risk when used in accordance with standard laboratory practices and the procedures of this insert.
- ATP Surface Swabs are made of 100% recyclable plastic and may be discarded accordingly.

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