

# 3M™ Clean-Trace™ Hygiene Monitoring and Management System



**Best Practice Guide**  
 ▶ ATP Sampling Techniques

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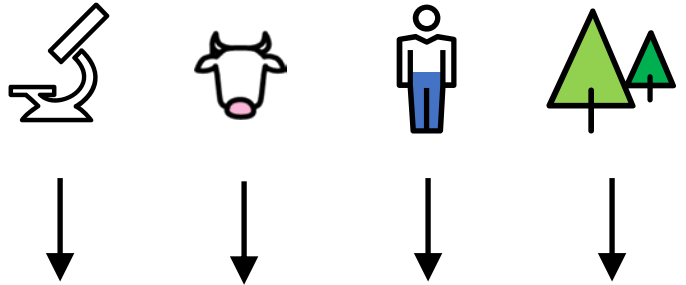
# ATP Testing Overview

The 3M™ Clean-Trace™ Surface ATP Test is based on ATP (Adenosine Triphosphate) bioluminescence technology. ATP is found in all living cells and in food products produced from a living source.

3M Clean-Trace Surface ATP tests are used to determine whether a surface has been cleaned effectively. Any food residue or microbial cells that remain on the surface will contain ATP and will react with the reagents contained in the test (luciferin and luciferase enzyme) to produce light.

Once an area has been swabbed, the test is activated and placed inside the 3M Clean-Trace Luminometer. The luminometer will measure the light produced and convert it to a number. This number is a measurement of Relative Light Units (RLU).

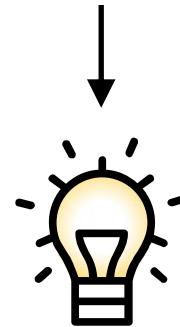
## Principle behind ATP bioluminescence.



**ATP = Adenosine Triphosphate**  
The “energy currency” molecule  
of all living organisms

+

**Luciferin/Luciferase**



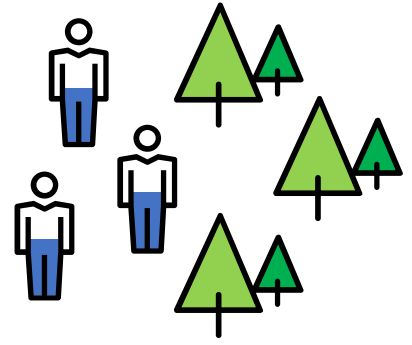
The greater the level of contamination sampled on the swab the greater the amount of light produced. The greater the amount of light produced the greater the RLU number produced on measurement.

The 3M Clean-Trace Surface ATP Test is a simple, self-contained swab test used to measure the cleanliness of a surface following cleaning.

Pass and Fail levels are set following the implementation stage. It is essential that accurate results are achieved to ensure cleaning is monitored correctly. It is also important that testing is carried out consistently and that all operators test in the same way. Also take good care of the 3M Clean-Trace Luminometer and ensure it is handled carefully. Take care not to knock or drop the luminometer against surfaces to avoid any damage or failure in instrument function. The 3M Clean-Trace Luminometer can be checked using the 3M™ Clean-Trace™ Surface Positive Control. (Please see details on page 6.)

The instructions on page 3 explain how swab samples should be taken and how the tests are then processed and measured accurately.

**Increase  
in organisms  
or organic  
residues**



**Increase  
in ATP levels**

**Increase  
in light (RLU)**



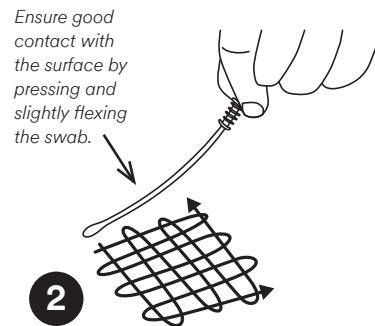
# ATP Sampling and Testing Procedure

## Swab Activation and Measurement

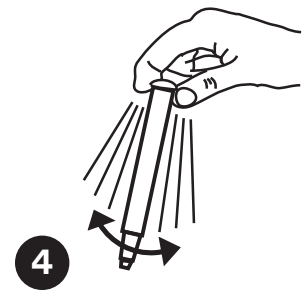
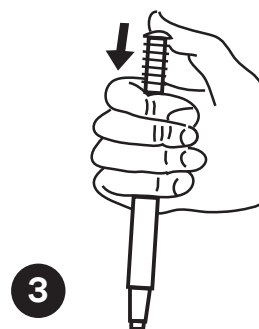
- Remove the swabs from the refrigerator 10 minutes prior to use to allow to reach room temperature.
- Before using a 3M Clean-Trace Surface ATP Test, check the swab device is not damp on its surface. If so, wipe gently to remove any moisture to avoid contamination of the luminometer chamber.
- Before testing, turn on the 3M Clean-Trace Luminometer and select the sample plan and test points to be tested. Ensure the correct test point is selected on the luminometer.

### Procedure for taking a 3M Clean-Trace Surface ATP test sample:

1. Swab a representative area of the surface to be tested. Typically, 10×10 cm on a flat surface.
  2. Swab horizontally from one side to the other, continue to swab across the whole surface and repeat the procedure vertically from top to bottom.
  3. Once swabbing is complete, return the swab to the device. Activate the test by pressing down the blue handle into the tube.
  4. Ensure the test is shaken, side to side only, for at least five seconds to ensure mixing of reagents.
- Shake from side to side only.
  - Do not shake the test up and down.
  - Read the test in the luminometer immediately after shaking.



When swabbing, rotate the swab to ensure the whole of the swab bud is used.



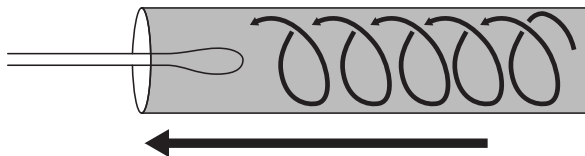
# ATP Sampling and Testing Procedure

## Sampling non-flat surface areas

- It is likely that a number of test points will not be flat surfaces. Where surfaces are accessible, such as the internal surface of a bowl, look to sample an equivalent 10×10 cm area as you would on a flat surface.
- If the surface is small then swab the whole area.
- For areas such as filling tubes slightly twist the swab so the bud rotates around the internal surface.
- Continue to do this as the swab is moved into the filling tube as far as it can go and repeat the action as it is pulled out of the filling tube.



- For large surface areas where the whole surface is not being sampled avoid testing the same area each time or day the swabs are taken. Try to vary this as much as possible. This will ensure over time results will be representative of the efficiency of cleaning for the whole area.



- A testing regime should include difficult to clean areas as part of the sampling schedule to ensure all areas are cleaned consistently.

**The most important factors are that all areas are swabbed consistently and all operators test in the same way.**

# ATP Sampling and Testing Procedure

## Using the 3M Clean-Trace Luminometer to take a test measurement

### Selecting a test point on the Luminometer

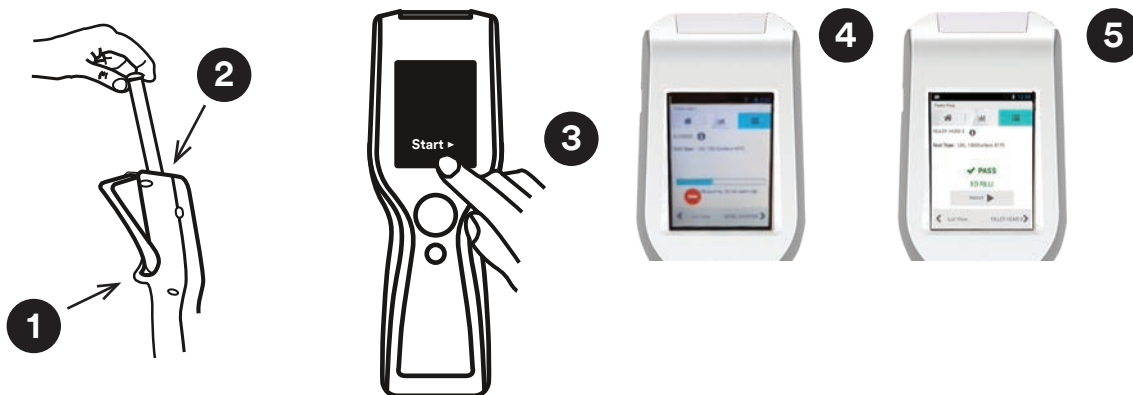
The test point is selected from using a *Sample Plan* or *Unplanned* testing options on the luminometer.

### Taking a test measurement:

#### Select the test point to be tested on the luminometer

1. Open the 3M Clean-Trace Luminometer by pressing the rocker cap.
2. Insert an activated 3M Clean-Trace ATP test device into the chamber, making sure the device is at the bottom of the chamber.  
The 3M Clean-Trace ATP test handle should be visible at the top of the chamber.
3. Release the rocker cap and press Start on the luminometer screen to measure the 3M Clean-Trace ATP test.
4. The status will be displayed on the luminometer screen.
5. When the testing is complete the result will be displayed on the luminometer screen.
6. After the measurement is completed, open the chamber by pressing the rocker cap and remove the 3M Clean-Trace ATP test device by grasping the top of the test and pulling upwards.

Follow the instructions for disposal in the 3M Clean-Trace Test *Instructions for Use*. Consult with local regulations for any additional regulations regarding disposal.



# 3M™ Clean-Trace™ Surface Positive Control

## Purpose

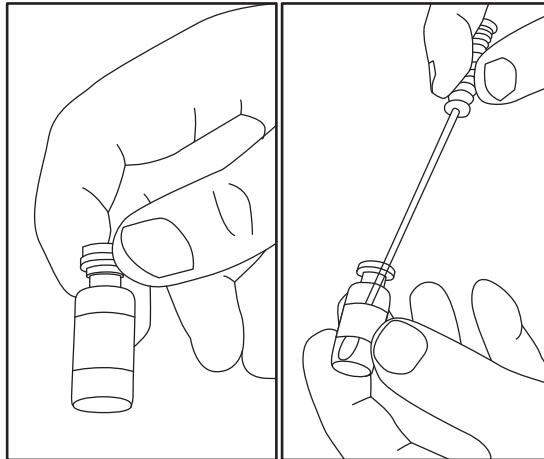
3M Clean-Trace Surface Positive Control provides a method to demonstrate that the 3M Clean-Trace Luminometer and 3M Clean-Trace Surface ATP Tests are functioning correctly. This can be carried out on a daily or weekly basis depending on the number of samples taken or can be carried out for each batch of 3M Clean-Trace Surface ATP Tests received. This supports best practice requirements.

1. Switch on the instrument and allow it to take its diagnostic check.
2. Remove reagents from fridge ten minutes before use to allow reagents to reach room temperature.
3. Take an ATP vial from the box and carefully remove the rubber stopper

4. Remove a 3M Clean-Trace Surface ATP Test from its tube. Avoid touching the swab bud.

5. Swab the interior of the ATP vial by rubbing the swab bud around the internal vial glass surface. Ensure all the reagent pellet is absorbed onto the swab bud surface.

6. Remove the swab and return to the test tube. Activate and mix as instructed in the swab activation and measurement instructions. **Ensure the device is shaken well as per instructions for at least five seconds.**



7. Place the swab immediately into the luminometer chamber and press start.
8. **Check that the result is greater than 10,000 RLU.**

The test can also be used to confirm if there are any quenching effects from cleaning chemicals/sanitizers:

Follow the procedure above and prior to collecting the sample from the vial swab a cleaned area where the sanitiser is present post cleaning. Interference is indicated where the result is below 10,000 RLU.



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