

# Setting ATP Threshold Levels for EnSURE, SystemSURE Plus, and SystemSUREII Luminometers

Setting correct Pass, Caution and Fail levels is critical to running an ATP hygiene-monitoring program well. These levels may vary depending of type of product being manufactured and the surface/liquid being checked, but the way in which Pass, Caution and Fail levels are determined is the same.

When using either the [System Sure II](#) or [System Sure Plus luminometers](#) with the [UltraSnap Swabs \(ATP2020\)](#), **1 fmol ATP = 1RLU**. You may use the RLU thresholds listed below without any change.

If using the [EnSURE luminometer](#) with the [UltraSnap swabs \(ATP2020\)](#), **0.5 fmol ATP = 1RLU**. This new [EnSURE luminometer](#) is now 2X more sensitive. Therefore, you would multiply the below RLU values by **2** to determine your pass/fail thresholds.

If using the [System Sure II](#) or [System Sure Plus](#) with the [SuperSnap swabs \(ATP3000\)](#), **0.2 fmol ATP = 1RLU**. The [SuperSnap swabs](#) are 5X more sensitive when used in these 2 [luminometers](#). Therefore, you would multiply the below RLU values by **5** to determine your pass/fail thresholds.

If using the [EnSURE luminometer](#) with the [SuperSnap swabs \(ATP3000\)](#), **0.1 fmol ATP = 1RLU**. The [SuperSnap swabs](#) are 10X more sensitive when used in this new [luminometer](#). Therefore, you would multiply the below RLU threshold values by **10** to determine your pass/fail thresholds.

## **SETTING UP ATP LEVELS**

There are two different ways to setup ATP levels; 1) Vigorous Cleaning and 2) Routine Cleaning. The Vigorous Cleaning setup option is used by facilities requiring extremely high standards and easy to clean surfaces. Both methods produce similar results with slight variation.

Scigiene also provides general recommended ATP levels, which meet most manufacturers' hygiene standards.

### **(1) Vigorous Cleaning**

1. Identify control points (Hot Spots) in SSOP/HACCP program.
2. Clean all surfaces thoroughly, to achieve the best possible level of cleanliness. This may include a total production line breakdown.
3. Conduct an ATP Hygiene Monitoring test at each location. (Take 1-5 replicate tests)
4. Calculate the average RLU for each location. These will be considered the 'PASS' limits.
5. The "FAIL" limits can be determined in two ways:
  - a. Multiply the Pass limits by 2 for easy to clean areas and 3 for harder to clean areas. OR:
  - b. Determine the standard deviation from the average RLU and multiply this number by 3 and add it to the 'Pass' limit.

## **(2) Routine Cleaning**

1. Identify control points (Hot Spots) in SSOP/HACCP program.
2. Clean product surfaces to level that daily sanitation program should achieve.
3. Conduct ATP Hygiene Monitoring tests at several locations and over several days to give 20–50 results.
4. Calculate the average RLU values. This is the “PASS” limit for all test locations.
5. The “FAIL” limit can be determined in two ways:
  - a. Multiply the Pass limits by 3.

OR:

- b. Determine the standard deviation from the average RLU and multiply this number by 3 and add it to the Pass limit.

The area between the Pass and Fail thresholds is the ‘Caution’ area, which is useful for trend analysis and providing early warnings. Users may opt to forgo the Caution zone and set the Fail limit 1 RLU more than the Pass limit. Any result over the pass limit is now considered a failed result.

## **(3) Scigiene General Pass/Caution/Fail Levels**

Scigiene offers two general guidelines for threshold levels based on type of surface being tested. These are common levels used for ATP hygiene monitoring and may or may not suit the standards at every facility. To determine independent ATP levels follow option 1 or 2 from above.

	<b>Guideline for Easy to Clean Surfaces</b>		
	Pass	Caution	Fail
<b>RLU</b>	< 10	11 – 19	> 20

\*Easy to clean surface = stainless steel or non-porous flat surfaces. i.e. sinks, wash buckets, slicers, table tops, bins.

Readings less than 10 RLU (PASS) indicate that the surface is clean. Readings between 11 – 19 RLU (CAUTION) indicate the surface may not have been adequately cleaned. Caution results should be retested and noted for future improvement. Readings greater than 20 RLU (FAIL) are considered dirty/contaminated and must be cleaned again and retested.

	<b>Guideline for Hard to Clean Surfaces</b>		
	Pass	Caution	Fail
<b>RLU</b>	< 10	11 – 29	> 30

\*Hard to clean surface = porous surfaces, objects with grooves/crevices. i.e. conveyor belts, nozzles, O-rings, drains, walls, rubber tubing.

Readings less than 10 RLU (PASS) indicate that the surface is clean. Readings between 11 – 29 RLU (CAUTION) indicate the surface may not have been adequately cleaned. Caution results should be retested and noted for future improvement. Any readings greater than 30 RLU (FAIL) are considered dirty/contaminated and must be cleaned again and retested.

NOTE: The same corrective action rules should be followed for pass/caution/fail results found with independent threshold settings. If no caution zone is used, all failed results should be cleaned again and retested until a pass result is achieved.

### **Continuous Improvement**

Monitoring and assessment of trends is crucial to finding trouble zones, correcting improper cleaning procedures and eliminating risk. Continuous improvement provides brand protection, avoids recalls and shows due diligence and compliance.

If high numbers of Caution and Fail results are obtained with ATP monitoring, SSOP should be reviewed by experts for ways to improve. If low numbers of Caution and Fail results are obtained, pass/fail levels should be reviewed and lowered to maintain high standards and generate more useful management data.



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