

Obtaining low RLU results when surfaces or water samples are visibly contaminated.

Hygiena environmental surface swabs and water tests are designed to test samples for residual contamination where surfaces are visibly clean or water samples are clear. While a surface can appear clean or a water sample clear, organic residues can still be present and these can be microbial in origin or residues from other non-microbial sources that can provide nutrients for microbial growth eg food residues. Hygiena tests are very sensitive and will be able to detect remaining organic residues by measuring the levels of ATP (Adenosine-Tri - Phosphate) in a sample. This will then produce an RLU (Relative Light Unit) result that is relative to the amount of ATP collected during the sampling with a swab test or collected by a water test.

Where a test is taken on a surface and there is still visible contamination and high levels of product residue present it would be expected that a high RLU value would be produced. The same can be said where a water sample is cloudy. In a number of situations, this is not the case and a low result is obtained. This can give the impression a test is not working as it should. However the test is still functioning in the way it would be expected to, but where a test is overloaded by product residue this can interfere with the bioluminescent reaction, subsequently reducing or stopping the production of light. Where this occurs a low RLU value is produced by the instrument when the test is measured. This "Quenching" effect can be a result of a number of factors including-

1. Masking/ absorbing of the light produced in the test by residues in the sample.
2. Product residues creating a barrier between the test reagents and product residues, preventing the test reaction.
3. Altering the pH value beyond the test reagent buffering capacity and creating an adverse environment for the enzyme reagent to work correctly.
4. High levels of preservative in the product interfering with the test reaction and chemistry.

5. Detergents remaining on the surface or in the rinse water where there has not been sufficient rinsing to remove them resulting in quenching of the reagents.

ATP hygiene testing is not designed to be used on surfaces where visible contamination is present or where water samples are visibly cloudy. Where there is a requirement to demonstrate the effectiveness of the Hygiena test, then sampling a contaminated surface or water sample should be only undertaken where the gross product debris has been removed or an initial water rinse of the surface or system has been carried out. This prior to the detergent stage of the cleaning regime.

If you need any further support click on the icon below.

