

Riboflavin Coverage Test

Introduction

Meticulous cleaning of glassware and laboratory equipment is crucial for accurate scientific research and experimentation. Ensuring the absence of contaminants and residues is imperative to guarantee accurate and reliable results. To achieve this, the utilization of effective cleaning methods is essential. One way to evaluate cleaning processes, especially in intricate setups, is through the riboflavin coverage test. The test offers a reliable approach to comprehensively evaluate the thoroughness of cleaning coverage, employing the unique properties of riboflavin as a tracer substance.

Procedure

The riboflavin coverage test involves a sequential procedure aimed at evaluating the efficacy of the clean-in-place (CIP) system's coverage:

1. Apply Riboflavin Solution

Prepare a riboflavin solution at a concentration of 0.2 g/L. Coat the vessel's interior and glassware loaded in the washer with a misting spray bottle. This step ensures that all potentially critical surfaces are exposed to the tracer substance.

2. UV Observation (Initial)

While the riboflavin-coated surfaces are still wet, examine them under ultraviolet (UV) light. The riboflavin's fluorescent properties make it visible under UV light, allowing easy visualization of its presence and distribution.

3. Wash Cycle

Execute a wash cycle to simulate the performance of the glassware washer and its ability to remove residues. The cleaning cycle used in this test is shown in the table below.



Eco Wash Cycle

Segment	Time (minutes)	Temperature	H2O Source	Detergent	Rinse Aid
Pre-Wash	0:05	38° C	Hot	None	-
Wash	0:10	60° C	Hot	Powder (40 g)	-
Rinse	0:05	38° C	Hot	-	Acid Rinse (8 mL)
Dry	0:15	80° C	-	-	-

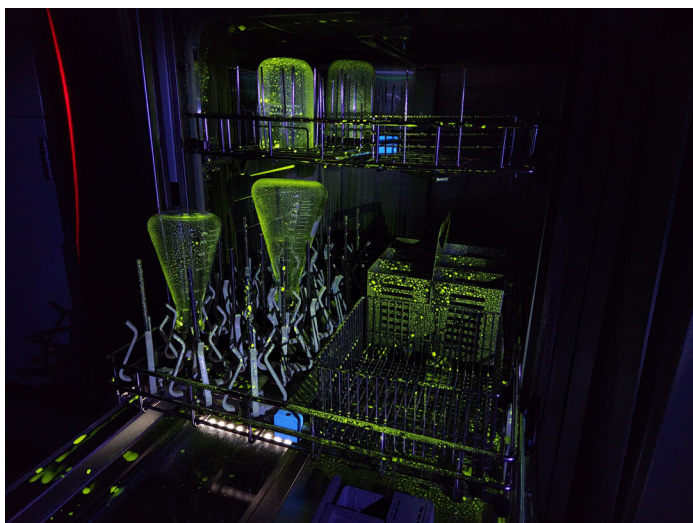
4. UV Observation (Post-Rinse)

Following the wash cycle, reexamine the riboflavin-coated surfaces under UV light while they are still wet. This observation allows for the evaluation of residual riboflavin presence, indicating areas of insufficient cleaning.

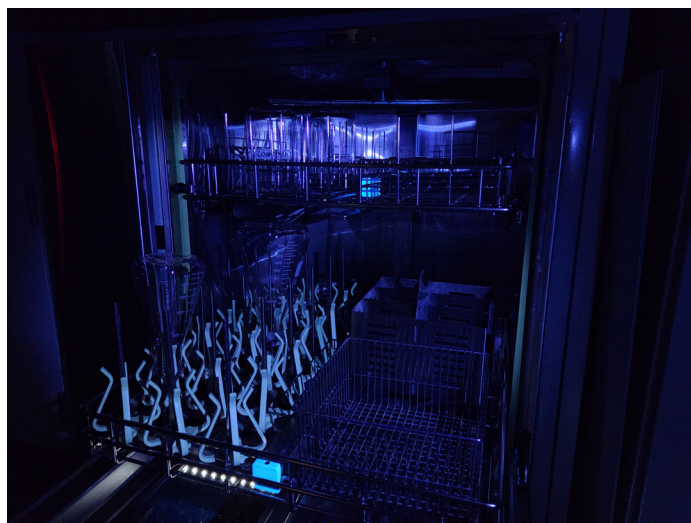
Assessment

The glassware washer's cleaning effectiveness is determined by the absence of visible fluorescent riboflavin after the final UV observation. If any fluorescent riboflavin remains, it signifies inadequate cleaning by the glassware washer.

When conducting this test on Labconco's FlaskScrubber® Laboratory Glassware Washer, no residual riboflavin solution was detectable within the washer or on any of the glassware present after the wash cycle concluded.



Before



After

Conclusion

The riboflavin coverage test reliably assesses a glassware washer's coverage during cleaning. By utilizing riboflavin's fluorescence, this test reveals the presence of residues and if they are removed from surfaces in the wash cycle. As shown in this test, the FlaskScrubber removes the residues from the internal surfaces of the glassware during its cleaning cycle.

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