CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021

DateRun: 09/06/2021

Experimenters: Aditi Patel

ClientType: Cleaning Company

ProjectNumber: Project #2

Substrates: Textile

PartType: Coupon

Contaminants:

Cleaning Methods: Steam

Analytical Methods: Organism count

Purpose: To test the disinfection efficacy of NuSteam on cotton fabric to disinfect Candida albicans (C.albicans) after 15 seconds of contact time.

Experimental Procedure:

Spread Plating Method

Twenty-four hours prior to the test, C.albicans was sub-cultured into three milliliters of tryptic soy broth (TSB) screw-cap tubes and incubated at 37°C (98.6°F). Four glass Petri dishes, each containing a single 2" x 1" swatch of clean cotton fabric, were autoclaved. After autoclaving, the four glass Petri dishes were marked using a black sharpie to designate the positive (P+), negative (N-), Test 1 (T1), and Test 2 (T2).

The biosafety cabinet (BSC) was sprayed with 70% v/v isopropyl alcohol using a paper towel before spraying all items going into the BSC after 15 minutes of BSC airflow stabilization. Ten microliters of the organism were pipetted onto the P+, T1, and T2 fabric swatches and air-dried for 15 minutes in the Petri dishes. A motorized pipette with 10ml tips was used to pipet 15 ml of D/E neutralizing broth into four separate 50ml conical tubes labeled P+, N-, T1, and T2. Once C.albicans was air-dried, the P+ swatch was placed into the conical tube. The N-, T1 and T2 swatches were treated with the NuSteam.

The supplied NuSteam cleaning disc was attached when testing, and three provided pads were autoclaved before spot testing. The pads were directly placed onto the N-, T1, and T2 swatches for 15 seconds of direct contact without movement before placing them into each of the respective D/E broth conical tubes with autoclaved forceps. The conical tubes were placed on the shaker for 10 minutes.

Using the 1000µl pipette, 900µl of 1X PBS was pipetted into autoclaved dilution tubes, and serial dilutions were made for P+, T1, and T2 up to 10^{-4} using 100µl of the shaken D/E broth. The stock and serial dilution solutions were plated and spread evenly over the surface of the solid tryptic soy agar (TSA) using a metal spreader. Finished plates were placed into a clean labeled zip lock bag and incubated at 37°C overnight. Isolated colonies were counted the following day to calculate log reduction and percent removal.

Results:

Product	Log of Positive Swatch	Log Reduction	% Reduction
NuSteam	5.19	5.19	100%

Summary:

Substrates:	Textile				
Contaminants:					
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Bespoke Marketing Inc	NuSteam		100.00	☑	

Conclusion: NuSteam was effective at disinfecting C.albicans with a 5.19 Log Reduction within 15 seconds of direct contact on cotton fabric.