Effectiveness of cleaning Speech Buddies® with wipes

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Abstract:
Many bacteria, viruses, fungi and spores need to be controlled in school, clinic, and hospital settings. Pathogenic bacteria such as *Escherichia coli* (E coli), *Staphylococcus aureus* ("staph"), *Streptococcus pygenes* ("strep"), and *Salmonella enterica* have often been studied as they are common yet challenging bacteria to safeguard against. Clorox® Germicidal wipes have demonstrated fast, broad spectrum efficacy on 51 microrganisms and are used by 8 out of 10 hospitals to kill pathogens of most concern. This study, conducted by SGS Life Sciences, examined the effectiveness of cleaning Speech Buddies with Clorox® Germicidal wipes. Results showed a log reduction of 3.1 in bacterial count between test and positive control samples, with 0 colony forming units (CFU) remaining after cleaning. This result passes accepted log reduction thresholds, verifies the protocol is acceptable for use, and shows that germicidal wipes can be an effective method to clean Speech Buddies in a school, clinic or hospital environment.

1.0 Purpose

The purpose of this study is to evaluate the efficacy of using wipes to clean Speech Buddies®. Wipes are a simple, yet effective cleaning tool for various pathogens and can be used in a school, clinic, or hospital environment. We hypothesize that cleaning Speech Buddies® with Clorox® wipes will achieve a log 3 reduction in colony forming units between positive control and test samples, proving that it is an acceptable cleaning protocol.

2.0 Methods

2.1. Test Facility and Test Articles.

This study was performed by SGS Life Science Services, Inc. at a certified test laboratory. The test articles, MN-SpeechBuddies-S (*Articulate Technologies, Inc. San Francisco, CA*) were evaluated as they were determined to be the Speech Buddies that were the hardest to clean from pathogens due to the small features of the device. Clorox® Germicidal Wipes (*The Clorox Company, Oakland, CA*) were the test system that was evaluated.

2.1. Experimental Design

Positive control and test samples were inoculated with a suspension of $2.8x10^6$ colony forming units of *Staphylococcus aureus* (ATTC 6538) under a laminar flow hood. The inoculation zone was concentrated on the portion of the test article that is introduced into the month during use and was clearly specified in the protocol. The samples were allowed to remain in the hood until they were dry.

Disinfection was performed on a test sample using the following process. With sanitized hands and gloves, a Clorox Germicidal wipe was removed and the Speech Buddy was thoroughly wetted with the wipe, including the handle, all corners and cylindrical tip. The Speech Buddy sample was then placed on a flat clean surface in the laminar flow hood and allowed to remain for two minutes. Next, the Speech Buddy was rinsed under running tap water (24°C) for 30 seconds.

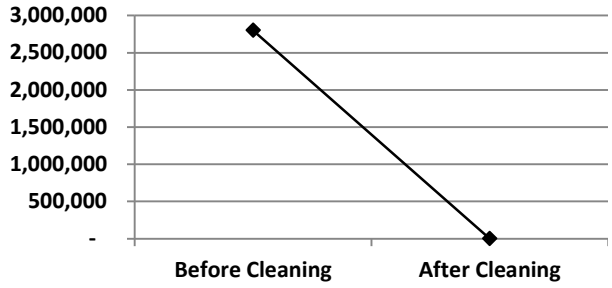
Positive Control and Test samples underwent bioburden testing per SGS SOP 14B-11. Samples were immersed in a volume of Fluid D sufficient to cover the sample and were extracted by shaking. Dilutions of the samples were membrane filtered and plated onto TSA. The TSA plates were incubated at 30-35C for a minimum of 48 hours. At the conclusion of the incubation period, the samples were removed from the incubator and enumerated.

Log reduction will be calculated as Log(A)-Log(B)=Log Reduction, where A = total positive control colony forming units, and B = total test sample colony forming units.

3.0 Results and Discussion

The Log reduction in colony forming units between the control and experimental was Log 3.1, which passed required thresholds. The unit reduction in colony forming bacterial units was from $2.8x10^6$ to zero units post cleaning as shown in Figure 1.

Figure 1: Colony Forming Unit (CFU) reduction from $2.8x10^6$ to 0 after cleaning with wipes



These results pass the Log 3 reduction thresholds required by SGS Life Science and met the approval criteria outlined in the protocol. In addition, these results are in-line with results of germicidal wipe testing on more than 51 microbes performed by The Clorox Company. As per the SGS Certificate of analysis the testing protocol is acceptable for use and can be used as an effective cleaning method for schools, clinics and hospitals.