

### **Protocol for the Evaluation of Bactericidal Activity**

This document describes a testing protocol edited by ArC Labs SA to support the evaluation of bactericidal activity of hard non-porous copper and copper alloy-based surface products with non-food contact surface sanitizer claims. The following items summarize the approach employed in this protocol to support these product claims:

- A detailed product characterization is recommended to provide information on the product's physical durability and chemical stability as they relate to the proposed use patterns.
- Efficacy testing involves the evaluation of two product production lots against *Staphylococcus aureus*, *E.coli*.
- An effective product is expected to achieve a 3 log<sub>10</sub> reduction (LR) in viable bacteria (compared to the control) for all three microbes within a 5 and 30 min contact period. Additional details on the performance standard are described in the Product Performance Data section.

Efficacy test results will be used to determine the sanitizing activity of the copper-containing surface product by comparing the reduction in viable bacteria on product carriers to the control carriers. This procedure has been established for use with copper-containing materials; however, the procedure may also be appropriate to test other solid, non-food contact surfaces for antimicrobial activity.

Product performance testing is conducted on four production lots; with exposed carriers and with unexposed carriers. The term "exposed" refers to carriers used in the physical and chemical assessment, while "unexposed" carriers have not been subjected to the physical and chemical assessment. All test followed by positive and negative controls and subjects tested at 5min and 30 mins contact period.

Calculate the mean log reduction in viable cells for each microbe for the following treatments: 1) exposed product carriers , 2) unexposed product control carriers and 3) product carriers. Log reduction values are calculated based on the difference in log densities associated with the product test carriers compared to the stainless steel (blank) control carriers.

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