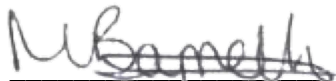


Quantitative suspension test for the evaluation of basic bactericidal activity of chemical disinfectants and antiseptic – Phase 1

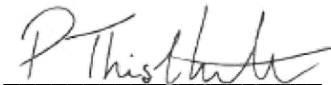
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Report Date: 19/08/2020
Issue Number: 1



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The test results on this report refer only to the items tested as supplied by the customer. This report shall not be reproduced except in full and with written approval of Microbiological Solutions Ltd. All reports are archived for a minimum of 2 years. The sample will be retained for 1 month unless otherwise requested in writing.

Scope

This standard is designed to establish whether a chemical disinfectant or antiseptic does or does not have a basic level of bactericidal activity. The acceptability of a product for a defined purpose cannot be determined from this standard.

Outline of Test Method (Obligatory Test Conditions)

A sample of the test product is diluted distilled water. A test suspension of bacteria is then added to the concentrations of product and maintained at 20°C for the contact time. At the end of the contact time an aliquot is taken and the bacterial / bacteriostatic activity is immediately neutralised or suppressed by the validated method. The numbers of surviving bacteria in each sample are determined and the reduction is calculated.

The test is performed using *Pseudomonas aeruginosa* and *Staphylococcus aureus* as standard organisms.

Acceptance Criteria

The product when tested as above shall demonstrate at least a 5 log₁₀ reduction in viable bacterial counts. The test is deemed valid where all control requirements are met.

| Test information | | Deviation |
|--|--|-----------|
| Name of Product | Quat Guard | / |
| Batch Number & Expiry Date | N/S | |
| Date of Delivery | 09/07/2020 | |
| Period of Analysis | 23/07/2020-25/07/2020 | |
| Manufacturer / Supplier | Sanglier | |
| Storage Conditions | Ambient | |
| Appearance of the Product | Clear liquid | |
| Neutraliser | N6 | |
| Neutralisation Method | Dilution | |
| Product Diluent | Distilled water | |
| Test Concentrations | Neat (80%), Mid-range (50%), Non active (0.1%) | |
| Test Temperature | 20°C ±1°C | |
| Temperature of Incubation | Bacteria – 37°C ±1°C for 24hr to 48hrs | |
| Identification of the Bacterial Strains: | <i>Pseudomonas aeruginosa</i> NCTC 13359 (ATCC 15442) <i>Staphylococcus aureus</i> NCTC 10788 (ATCC 6538) | |
| Contact Times | 5 minutes ± 10s | |
| Stability and Appearance During Test | No Change Observed(Homogenous) | |

Deviations from Standard Method

There were no deviations from the standard method

Test Result Summary

The test product received has achieved >5 log reduction when tested under the condition stipulated in this report.

See page 2 for acceptance criteria and raw data tables below for complete test results.

Validation and Controls

| Validation suspension (Nv ₀) | | | Experimental condition controls (A) | | | Neutraliser or Filtration Control (B) | | | Method Validation (C) | | |
|---|---------|---------|-------------------------------------|--------|--------|---------------------------------------|---------|---------|---------------------------------|---------|---------|
| $\bar{x} =$ | | | $\bar{x} =$ | | | $\bar{x} =$ | | | $\bar{x} =$ | | |
| Vc1 | Pa. 86 | | Vc1 | Pa. 80 | | Vc1 | Pa. 112 | | Vc1 | Pa. 89 | |
| | Sa. 104 | Pa. 74 | | Sa. 99 | Pa. 70 | | Sa. 98 | Ps. 119 | | Sa. 111 | Pa. 90 |
| Vc2 | Pa. 61 | Sa. 107 | Vc2 | Pa. 59 | Sa. 99 | Vc2 | Pa. 126 | Sa. 101 | Vc2 | Pa. 90 | Sa. 112 |
| | Sa. 109 | | | Sa. 98 | | | Sa. 103 | | | Sa. 112 | |
| 30 ≤ \bar{x} of Nv ₀ ≤ 160? Yes | | | \bar{x} of A ≥ 0.5 Nv0 Yes | | | \bar{x} of B ≥ 0.5 Nv0 Yes | | | \bar{x} of C ≥ 0.5 Nv0 Yes | | |

Test Results

| Test Organism | Suspension N | Test concentration | | |
|---|---|---|---|--|
| | | Neat | 50 | 0.1 |
| <i>Pseudomonas aeruginosa</i> ATCC 15442 | 10 ⁶ 238 ; 206 10 ⁷ 60 ; 41 N ₀ : 7.39 Valid | 10 ⁰ 0 ; 0 Na ; < 2.15 R > 5 | 10 ⁰ 0 ; 0 Na ; < 2.15 R > 5 | 10 ⁴ 327 ; >330 Na ; > 7.52 R < -0.12 |
| <i>Staphylococcus aureus</i> ATCC 6538 | 10 ⁶ >330 ; >330 10 ⁷ 50 ; 49 N ₀ : 7.69 Valid | 10 ⁰ 0 ; 0 Na ; < 2.15 R > 5 | 10 ⁰ 0 ; 0 Na ; < 2.15 R > 5 | 10 ⁴ >330 ; >330 Na ; > 7.52 R < 0.18 |

KEY

| | |
|----------------|--|
| N_0 | Log ₁₀ number of cfu/ml at the beginning of the contact time = $N/10$ |
| N_{v0} | is the number of cfu/ml in the validation test suspension at the beginning of the contact time |
| A | is the verification of experimental conditions control |
| B | is the neutraliser toxicity control |
| C | is method validation |
| V_c | is the colony forming units counted per 1ml of sample |
| \bar{x} | is the average of V_{c1} & V_{c2} |
| \bar{x}_{wm} | is the weighted mean of N |
| N_a | Log ₁₀ number of surviving cfu/ml in the test mixture |
| R | ($\lg N_0 - \lg N_a = \lg R$) is the calculation for reduction in viability |
| PASS | = $\lg R$ greater than or equal to 5 |
| FAIL | = $\lg R$ less than 5 |
| > | Greater than |
| ≥ | Equal to or greater than |
| < | Less than |
| ≤ | Equal to or less than |