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HygiCare ApS
Vesterbrogade 76
DK – 1620 Cph.V
Denmark

Hamburg, 08 October 2012

Expert Report

Bactericidal Activity of **SurfaceCare** in the Quantitative Surface Test according to DIN EN 13697:2001 (Phase 2, Step 2)

(Renaming of expert report for Disinfectant SurfaceCare from 17. August 2011)

The disinfectant **SurfaceCare** was tested and evaluated according to DIN EN 13697:2001 “Quantitative Non-Porous Surface Test for the Evaluation of Bactericidal und/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domes- tic, and Institutional Areas – Test Method without Mechanical Action and Requirements (Phase 2/Step 2)“.

According to test report no. L11/097 from Dr. Brill + Partner GmbH dated 17/08/2011, the test preparation showed bacteri- cidal and yeasticidal activity under dirty conditions.

The requirements of DIN EN 13697: 2001 (Phase 2, Step 2) were fulfilled with the following concentration-time relation- ships:

| | | |
|-------------------------------|----------------|-------------------|
| Bactericidal activity: | 100.0 % | 1 minute |
| Yeasticidal activity: | 100.0 % | 5 minutes. |

Dr. Florian H. H. Brill



Test Report No. L11/097

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants and Antiseptics Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

**(Renaming of expert report for
Disinfectant SurfaceCare from 17. August 2011)**

In accordance with your order, we tested the preparation **HygiCare** for its activity according to DIN EN 13697:2001* under dirty conditions.

1 General Information and Material

1.1 Client

Client: HygiCare ApS, Mr. Jorgen Petersen,
Vesterbrogade 76, DK-1620 Cph.V
Date of order: 08/07/2011

1.2 Identification of Test Laboratory

Site: Dr. Brill + Partner GmbH · Institut für Hygiene und Mikrobiologie,
Stiegstück34, DE-22339 Hamburg
Study manager: Dipl.-Biol. Dr. rer. nat. Florian Brill
Scientific assistant: Dipl.-Biol. Henrik Gabriel, Dipl.-Biol. Dr. rer. nat. Jan-Hendrik Klock
Laboratory technicians: Carmela Jänicke, Marion Korsch, Ulrike Ißleib

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* Test procedure accredited according to DIN EN ISO/IEC 17025. Test report issued by Dr. Brill + Partner GmbH, Stiegstück 34, DE - 22339 Hamburg, Phone +49 40 557631-0, Telefax +49 40 557631-11, www.brillhygiene.com. No copying or transmission, in whole or in part, of this test report without the explicit prior written permission. The test results exclusively apply to the tested samples. Information on measurement uncertainty on request. © Dr. Brill + Partner GmbH 2012



1.4 Identification of Sample

| | |
|--|---|
| Name of product: | SurfaceCare |
| Batch no.: | 170610 |
| Manufacturer: | HygiCare ApS, 1620 Cph.V, Denmark |
| Date of delivery: | 15/07/2011 |
| Storage conditions: | room temperature and darkness |
| Appearance of concentrate: | water clear solution |
| Odour: | Characteristic |
| Diluent used: | sterile water of standardised hardness (WSH), pH 7.09 |
| pH value, concentrate: | 5.28 |
| pH value, 50.0% (measured in WSH): | 5.28 |
| pH value, 10.0% (measured in WSH): | 6.67 |
| Active agents in 100 g test preparation: | not specified |

1.5 Test Conditions

| | | |
|-----------------------------------|--|------------|
| Test period: | 25/07/2011 – 15/08/2011 | |
| Product test concentration: | 10 %, 50 % and 100 % | |
| Exposure time: | 0.5, 1 and 5 minutes | |
| Test temperature: | 20°C ± 2°C | |
| Incubation temperature: | 36°C ± 1°C (bacteria), 30°C ± 1°C (fungi) | |
| Organic load: | dirty conditions (0.3 % bovine albumin) | |
| Neutraliser: | 80 g/L polysorbate 80, 0.8 g/L lecithin, 60 g/L saponin, 20 g/L SDS (TLS-SDS) | |
| Identification of test organisms: | <i>Staphylococcus aureus</i> | ATCC 6538 |
| | <i>Enterococcus hirae</i> | ATCC 10541 |
| | <i>Escherichia coli</i> | ATCC 10536 |
| | <i>Pseudomonas aeruginosa</i> | ATCC 15442 |
| | <i>Candida albicans</i> | ATCC 10231 |
| | <i>Aspergillus niger</i> | ATCC 16404 |

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2 Methods

The tests were carried out according to DIN EN 13697:2001 "Quantitative Non-Porous Surface Test for the Evaluation of Bactericidal und/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas – Test Method without Mechanical Action and Requirements (Phase 2/Step 2)".

3 Results

The test results according to DIN EN 13697:2001 are summarised in table 1 to 18.

For the test bacteria the cell counts in the test and validation suspensions were too high. The deviations were small and the validation tests were positive in all cases. Therefore, the results are evaluated as valid.

For *Candida albicans* the cell count in the test and validation suspension was too low. The deviation was small, in the range of the standard variation of this method and the validation test was positive. The results are evaluated as valid.

The preparation showed no sufficient efficacy against the test fungi *Aspergillus niger*.

The requirements of DIN EN 13697: 2001 (Phase 2, Step 2) were fulfilled against the test bacteria (bactericidal activity) and against *Candida albicans* (yeasticidal activity) with the following concentration-time relationships:

| | | |
|-------------------------------|----------------|-------------------|
| Bactericidal activity: | 100.0 % | 1 minute |
| Yeasticidal activity: | 100.0 % | 5 minutes. |

Hamburg, 08 October 2012

Dipl.-Biol. Dr. rer. nat. Jan-Hendrik Klock
Deputy Head of Laboratory

Dipl.-Biol. Dr. rer. nat. Florian H. H. Brill
Manager

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Table 1: Validation, Controls and Evaluation (DIN EN 13697:2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Staphylococcus aureus Test temperature: 20°C ± 2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) Product concentration: 100,00 % | | |
|------------------------------------|------|------|--|-----|-----|--|-----|-----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-04 | 120 | 120 | 1,00E-04 | 160 | 140 |
| 1,00E-07 | 30 | 40 | 1,00E-05 | 17 | 16 | 1,00E-05 | 22 | 25 |
| 0 = 1,75E+07 = 7,24 lg | | | 0 = 1,20E+07 = 7,08 lg | | | 0 = 1,50E+07 = 7,18 lg | | |
| 6,57 ≤ lg N ≤ 7,1 ? No | | | lgN - lgN _c ≤ ±0,3 ? Yes | | | lgN _c - lgN _T ≤ ±0,3 ? Yes | | |

| Water control | Water control (N _c): | N _c | a | a' | 0 = | lgN _c = | lgN - lgN _c ≤ 2 lg ? |
|---------------|----------------------------------|----------------|----|----|----------|--------------------|---------------------------------|
| | | 1,00E-04 | 65 | 60 | 6,25E+06 | 6,80 | Yes |
| | | 1,00E-05 | 7 | 5 | | | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c = 6,80) | Exposure time (min) |
|--------|--|-------------------|------|-------------------------|--|--------------------------------------|---------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | >300 | >300 | 1,80E+04 | 4,26 | 2,54 | 0,5 |
| | | 1,00E-01 | 200 | 160 | | | | |
| | | 1,00E-02 | 24 | 18 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |
| 50,00 | | 1,00E+00 | >300 | >300 | 1,20E+05 | 5,08 | 1,72 | 0,5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 120 | 120 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |
| 100,00 | | 1,00E+00 | >300 | >300 | 2,90E+04 | 4,46 | 2,33 | 0,5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 25 | 33 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |

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Table 2: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Staphylococcus aureus Test temperature: 20°C ± 2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) Product concentration: 100,00 % | | |
|------------------------------------|------|------|--|-----|-----|--|-----|-----|
| | X | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-04 | 120 | 120 | 1,00E-04 | 160 | 140 |
| 1,00E-07 | 30 | 40 | 1,00E-05 | 17 | 16 | 1,00E-05 | 22 | 25 |
| 0 = 1,75E+07 = 7,24 lg | | | 0 = 1,20E+07 = 7,08 lg | | | 0 = 1,50E+07 = 7,18 lg | | |
| 6,57 ≤ lg N ≤ 7,1 ? No | | | lg N - lg N _c ≤ ±0,3 ? Yes | | | lg N _c - lg N _T ≤ ±0,3 ? Yes | | |

| Water control | Water control (N _c): | N _c | a | a' | 0 = 7,50E+06 lg N _c = 6,88 lg N - lg N _c ≤ 2 lg ? Yes |
|---------------|----------------------------------|----------------|----|----|---|
| | | 1,00E-04 | 80 | 70 | |
| | | 1,00E-05 | 16 | 8 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lg N _c = 6,88) | Exposure time (min) |
|--------|--|-------------------|------|-------------------------|--|--------------------------------------|----------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 120 | 120 | 1,20E+03 | 3,08 | 3,80 | 1 |
| | | 1,00E-01 | 22 | 30 | | | | |
| | | 1,00E-02 | 1 | 0 | | | | |
| | | N _{ts} = | 18 | N _{ts} < 100 ? | Yes | | | |
| 50,00 | | 1,00E+00 | >300 | >300 | 4,00E+04 | 4,60 | 2,27 | 1 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 40 | 40 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |
| 100,00 | | 1,00E+00 | 40 | 40 | 4,00E+02 | 2,60 | 4,27 | 1 |
| | | 1,00E-01 | 2 | 4 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 2 | N _{ts} < 100 ? | Yes | | | |

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Table 3: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Staphylococcus aureus Test temperature: 20°C ± 2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) | | |
|------------------------------------|------|------|---|-----|-----|---|-----|-----|
| | X | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-04 | 120 | 120 | 1,00E-04 | 160 | 140 |
| 1,00E-07 | 30 | 40 | 1,00E-05 | 17 | 16 | 1,00E-05 | 22 | 25 |
| 0 = 1,75E+07 = 7,24 lg | | | 0 = 1,20E+07 = 7,08 lg | | | 0 = 1,50E+07 = 7,18 lg | | |
| 6,57 ≤ lg N ≤ 7,1 ? No | | | lg N - lg N _c ≤ ± 0,3 ? Yes | | | lg N _c - lg N _T ≤ ± 0,3 ? Yes | | |

| Water control (N _c): | Water control | N _c | a | a' | 0 = 8,00E+06 lg N _c = 6,90 lg N - lg N _c ≤ 2 lg ? Yes |
|----------------------------------|---------------|----------------|----|----|---|
| | | 1,00E-04 | 80 | 80 | |
| | | 1,00E-05 | 10 | 10 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lg N _c = 6,90) | Exposure time (min) |
|--------|--|-------------------|---|-------------------------|--|--------------------------------------|----------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 4 | 4 | < 1,40E+02 | < 2,15 | > 4,76 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 50,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,76 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 100,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,76 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |

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Table 4: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Escherichia coli Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) | | |
|------------------------------------|------|------|------------------------------------|----|----|---|----|----|
| | X | x' | | a | a' | | A | a' |
| 1,00E-06 | >300 | >300 | 1,00E-04 | 60 | 60 | 1,00E-04 | 40 | 34 |
| 1,00E-07 | 44 | 50 | 1,00E-05 | 16 | 15 | 1,00E-05 | 3 | 3 |
| $0 = 2,35E+07 = 7,37 \lg$ | | | $0 = 6,00E+06 = 6,78 \lg$ | | | $0 = 3,70E+06 = 6,57 \lg$ | | |
| $6,57 \leq \lg N \leq 7,1 ?$ | | | $\lg N - \lg N_c \leq \pm 0,3 ?$ | | | $\lg N_c - \lg N_T \leq \pm 0,3 ?$ | | |
| No | | | Yes | | | Yes | | |

| Water control | Water control (N _c): | N _c | a | a' | 0 = 7,00E+05 lg N _c = 5,85 lg N - lg N _c ≤ 2 lg ? |
|---------------|----------------------------------|----------------|----|----|---|
| | | 1,00E-03 | 80 | 60 | |
| | | 1,00E-04 | 11 | 9 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lg N _c = 5,85) | Exposure time (min) |
|--------|--|-------------------|---|-------------------------|--|--------------------------------------|----------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 3 | 4 | < 1,40E+02 | < 2,15 | > 3,70 | 0,5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 50,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 3,70 | 0,5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 100,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 3,70 | 0,5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |

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Table 5: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Escherichia coli Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) | | |
|------------------------------------|------|------|---|----|----|---|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-04 | 60 | 60 | 1,00E-04 | 40 | 34 |
| 1,00E-07 | 44 | 50 | 1,00E-05 | 16 | 15 | 1,00E-05 | 3 | 3 |
| 0 = 2,35E+07 = 7,37 lg | | | 0 = 6,00E+06 = 6,78 lg | | | 0 = 3,70E+06 = 6,57 lg | | |
| 6,57 ≤ lg N ≤ 7,1? No | | | lgN - lgN _c ≤ ±0,3? Yes | | | lgN _c - lgN _T ≤ ±0,3? Yes | | |

| Water control | Water control (N _c): | N _c | a | a' | 0 = 3,05E+06 lgN _c = 6,48 lgN - lgN _c ≤ 2 lg? Yes |
|---------------|----------------------------------|----------------|----|----|---|
| | | 1,00E-04 | 31 | 30 | |
| | | 1,00E-05 | 4 | 1 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c = 6,48) | Exposure time (min) |
|--------|--|-------------------|---|-------------------------|--|--------------------------------------|---------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,34 | 1 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 50,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,34 | 1 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 100,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,34 | 1 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |

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Table 6: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Escherichia coli Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) | | |
|------------------------------------|------|------|--|----|----|---|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-04 | 60 | 60 | 1,00E-04 | 40 | 34 |
| 1,00E-07 | 44 | 50 | 1,00E-05 | 16 | 15 | 1,00E-05 | 3 | 3 |
| 0 = 2,35E+07 = 7,37 lg | | | 0 = 6,00E+06 = 6,78 lg | | | 0 = 3,70E+06 = 6,57 lg | | |
| 6,57 ≤ lg N ≤ 7,1 ? No | | | lgN - lgN _c ≤ ±0,3 ? Yes | | | lgN _c - lgN _T ≤ ±0,3 ? Yes | | |

| Water control | Water control (N _c): | N _c | a | a' | 0 = 4,00E+06 | |
|---------------|----------------------------------|----------------|----|----|---------------------------------|-------------|
| | | 1,00E-04 | 40 | 40 | lgN _c = | 6,60 |
| | | 1,00E-05 | 8 | 3 | lgN - lgN _c ≤ 2 lg ? | Yes |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c = 6,60) | Exposure time (min) |
|--------|--|-------------------|---|-------------------------|--|--------------------------------------|---------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,46 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 50,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,46 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 100,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,46 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |

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Table 7: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Enterococcus hirae Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) | | |
|------------------------------------|------|------|---|----|----|---|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-04 | 28 | 22 | 1,00E-04 | 25 | 29 |
| 1,00E-07 | 99 | 94 | 1,00E-05 | 2 | 7 | 1,00E-05 | 3 | 3 |
| 0 = 4,83E+07 = 7,68 lg | | | 0 = 2,50E+06 = 6,40 lg | | | 0 = 2,70E+06 = 6,43 lg | | |
| 6,57 ≤ lg N ≤ 7,1? No | | | lgN - lgN _c ≤ ±0,3? Yes | | | lgN _c - lgN _T ≤ ±0,3? Yes | | |

| Water control | | Water control (N _c): | | | Validation neutralisation medium / Neutralisation control (N _T) | |
|---------------|----------------|----------------------------------|----|--------------------------------|---|--|
| | N _c | a | a' | 0 = | 3,55E+06 | |
| | 1,00E-04 | 41 | 30 | lgN _c = | 6,55 | |
| | 1,00E-05 | 6 | 6 | lgN - lgN _c ≤ 2 lg? | Yes | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c = 6,55) | Exposure time (min) |
|--------|--|-------------------|----|-------------------------|--|--------------------------------------|---------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 4 | 5 | < 1,40E+02 | < 2,15 | > 4,40 | 0,5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 50,00 | | 1,00E+00 | 29 | 23 | 2,60E+02 | 2,41 | 4,14 | 0,5 |
| | | 1,00E-01 | 2 | 3 | | | | |
| | | 1,00E-02 | 2 | 0 | | | | |
| | | N _{ts} = | 2 | N _{ts} < 100 ? | | | | |
| 100,00 | | 1,00E+00 | 21 | 16 | 1,85E+02 | 2,27 | 4,28 | 0,5 |
| | | 1,00E-01 | 3 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |

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Table 8: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Enterococcus hirae Test temperature: 20°C ± 2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) | | |
|------------------------------------|------|------|---|----|----|---|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-04 | 28 | 22 | 1,00E-04 | 25 | 29 |
| 1,00E-07 | 99 | 94 | 1,00E-05 | 2 | 7 | 1,00E-05 | 3 | 3 |
| 0 = 4,83E+07 = 7,68 lg | | | 0 = 2,50E+06 = 6,40 lg | | | 0 = 2,70E+06 = 6,43 lg | | |
| 6,57 ≤ lg N ≤ 7,1? No | | | lgN - lgN _c ≤ ±0,3? Yes | | | lgN _c - lgN _T ≤ ±0,3? Yes | | |

| Water control | | Water control (N _c): | | | 0 = 3,45E+06 | |
|---------------|----------------|----------------------------------|----|--------------------------------|--------------|--|
| | N _c | a | a' | lgN _c = | 6,54 | |
| | 1,00E-04 | 37 | 32 | lgN - lgN _c ≤ 2 lg? | Yes | |
| | 1,00E-05 | 6 | 4 | | | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c = 6,54) | Exposure time (min) |
|--------|--|-------------------|---|-------------------------|--|--------------------------------------|---------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,39 | 1 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | Yes | | | |
| 50,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,39 | 1 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | Yes | | | |
| 100,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,39 | 1 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 2 | N _{ts} < 100 ? | Yes | | | |

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Table 9: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Enterococcus hirae Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) | | |
|------------------------------------|------|------|--|----|----|---|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-04 | 28 | 22 | 1,00E-04 | 25 | 29 |
| 1,00E-07 | 99 | 94 | 1,00E-05 | 2 | 7 | 1,00E-05 | 3 | 3 |
| 0 = 4,83E+07 = 7,68 lg | | | 0 = 2,50E+06 = 6,40 lg | | | 0 = 2,70E+06 = 6,43 lg | | |
| 6,57 ≤ lg N ≤ 7,1 ? No | | | lg N - lg N _c ≤ ±0,3 ? Yes | | | lg N _c - lg N _T ≤ ±0,3 ? Yes | | |

| Water control | | Water control (N _c): | | | 0 = 3,00E+06 | |
|---------------|----------------|----------------------------------|----|-----------------------------------|--------------|--|
| | N _c | a | a' | lg N _c = | 6,48 | |
| | 1,00E-04 | 32 | 28 | lg N - lg N _c ≤ 2 lg ? | Yes | |
| | 1,00E-05 | 4 | 1 | | | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lg N _c = 6,48) | Exposure time (min) |
|--------|--|-------------------|---|-------------------------|--|--------------------------------------|----------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 0 | 1 | < 1,40E+02 | < 2,15 | > 4,33 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 50,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,33 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |
| 100,00 | | 1,00E+00 | 1 | 0 | < 1,40E+02 | < 2,15 | > 4,33 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | | | | |

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Table 10: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Pseudomonas aeruginosa Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) Product concentration: 100,00 % | | |
|------------------------------------|------|------|--|----|----|--|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-03 | 45 | 47 | 1,00E-03 | 81 | 64 |
| 1,00E-07 | 98 | 89 | 1,00E-04 | 2 | 7 | 1,00E-04 | 15 | 3 |
| 0 = 4,68E+07 = 7,67 lg | | | 0 = 4,60E+05 = 5,66 lg | | | 0 = 7,25E+05 = 5,86 lg | | |
| 6,57 ≤ lg N ≤ 7,1? No | | | lgN - lgN _c ≤ ±0,3? No | | | lgN _c - lgN _T ≤ ±0,3? Yes | | |

| Water control (N _c): | N _c | a | a' | 0 = | 5,40E+05 |
|----------------------------------|----------------|----|----|---------------------------------|-------------|
| | 1,00E-03 | 66 | 42 | lgN _c = | 5,73 |
| | 1,00E-04 | 10 | 3 | lgN - lgN _c ≤ 2 lg ? | Yes |

Test

| Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c = 5,73) | Exposure time (min) |
|--|-------------------|-----|----|--|--------------------------------------|---------------------------------|---------------------|
| 10,00 | 1,00E+00 | 120 | 92 | 1,06E+03 | 3,03 | 2,71 | 0,5 |
| | 1,00E-01 | 8 | 16 | | | | |
| | 1,00E-02 | 3 | 1 | | | | |
| | N _{ts} = | 100 | | N _{ts} < 100 ? | No | | |
| 50,00 | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 3,59 | 0,5 |
| | 1,00E-01 | 0 | 0 | | | | |
| | 1,00E-02 | 0 | 0 | | | | |
| | N _{ts} = | 0 | | N _{ts} < 100 ? | Yes | | |
| 100,00 | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 3,59 | 0,5 |
| | 1,00E-01 | 0 | 0 | | | | |
| | 1,00E-02 | 0 | 0 | | | | |
| | N _{ts} = | 0 | | N _{ts} < 100 ? | Yes | | |

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Table 11: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Pseudomonas aeruginosa Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) | | |
|------------------------------------|------|------|--|----|----|---|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-06 | >300 | >300 | 1,00E-03 | 45 | 47 | 1,00E-03 | 81 | 64 |
| 1,00E-07 | 98 | 89 | 1,00E-04 | 2 | 7 | 1,00E-04 | 15 | 3 |
| 0 = 4,68E+07 = 7,67 lg | | | 0 = 4,60E+05 = 5,66 lg | | | 0 = 7,25E+05 = 5,86 lg | | |
| 6,57 ≤ lg N ≤ 7,1? No | | | lgN - lgN _c ≤ ±0,3? No | | | lgN _c - lgN _T ≤ ±0,3? Yes | | |

| Water control | | Water control (N _c): | | | 0 = 2,30E+06 | |
|---------------|----------------|----------------------------------|----|--------------------------------|--------------|--|
| | N _c | a | a' | lgN _c = | 6,36 | |
| | 1,00E-04 | 22 | 24 | lgN - lgN _c ≤ 2 lg? | Yes | |
| | 1,00E-05 | 4 | 2 | | | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c = 6,36) | Exposure time (min) |
|--------|--|-------------------|---|------------------------|--|--------------------------------------|---------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 2 | 2 | < 1,40E+02 | < 2,15 | > 4,22 | 1 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 1 | N _{ts} < 100? | | | | |
| 50,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,22 | 1 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100? | | | | |
| 100,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,22 | 1 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100? | | | | |

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Table 12: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Pseudomonas aeruginosa Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium/ Neutralisation control (N _T) | | |
|------------------------------------|-------------------------------|------|------------------------------------|--|----|---|--|----|
| | x | x' | | a | a' | | a | a' |
| | 1,00E-06 | >300 | | 1,00E-03 | 45 | | 1,00E-03 | 81 |
| | 1,00E-07 | 98 | | 1,00E-04 | 2 | | 1,00E-04 | 15 |
| | 0 = 4,68E+07 = 7,67 lg | | | 0 = 4,60E+05 = 5,66 lg | | | 0 = 7,25E+05 = 5,86 lg | |
| | 6,57 ≤ lg N ≤ 7,1? No | | | lg N - lg N _c ≤ ±0,3? No | | | lg N _c - lg N _T ≤ ±0,3? Yes | |

| Water control | Water control (N _c): | N _c | a | a' | 0 = 4,15E+06 lg N _c = 6,62 lg N - lg N _c ≤ 2 lg? Yes |
|---------------|----------------------------------|----------------|----|----|--|
| | | 1,00E-04 | 45 | 38 | |
| | | 1,00E-05 | 6 | 8 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 w) cfu/ml | lg N _d = lg (0 v 0 w) | ME (lg N _c = 6,62) | Exposure time (min) |
|--------|--|-------------------|---|-------------------------|---------------------------------------|-------------------------------------|----------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,47 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | Yes | | | |
| 50,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,47 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | Yes | | | |
| 100,00 | | 1,00E+00 | 0 | 0 | < 1,40E+02 | < 2,15 | > 4,47 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | Yes | | | |

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Table 13: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: *Candida albicans* Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) Product concentration: 100,00 % | | |
|------------------------------------|-----|----|--|----|----|--|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-05 | 100 | 76 | 1,00E-03 | 36 | 30 | 1,00E-03 | 30 | 25 |
| 1,00E-06 | 29 | 20 | 1,00E-04 | 10 | 2 | 1,00E-04 | 2 | 2 |
| 0 = 4,40E+05 = 5,64 lg | | | 0 = 3,30E+05 = 5,52 lg | | | 0 = 2,75E+05 = 5,44 lg | | |
| 5,57 ≤ lg N ≤ 6,1 ? Yes | | | lg N – lg N _c ≤ ±0,3 ? Yes | | | lg N _c – lg N _T ≤ ±0,3 ? Yes | | |

| Water control | Water control (N _c): | N _c | a | a' | 0 = 3,10E+05 lg N _c = 5,49 lg N – lg N _c ≤ 2 lg ? Yes |
|---------------|----------------------------------|----------------|----|----|---|
| | | 1,00E-03 | 29 | 33 | |
| | | 1,00E-04 | 2 | 1 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lg N _c = 5,49) | Exposure time (min) |
|--------|--|-------------------|------|------|--|--------------------------------------|----------------------------------|---------------------|
| 10,00 | | 1,00E+00 | >300 | >300 | 1,38E+05 | 5,14 | 0,35 | 0,5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 134 | 142 | | | | |
| | | N _{ts} = | 170 | | N _{ts} < 100 ? | No | | |
| 50,00 | | 1,00E+00 | >300 | >300 | 7,90E+04 | 4,90 | 0,59 | 0,5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 96 | 62 | | | | |
| | | N _{ts} = | 67 | | N _{ts} < 100 ? | Yes | | |
| 100,00 | | 1,00E+00 | >300 | >300 | 5,80E+04 | 4,76 | 0,73 | 0,5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 72 | 44 | | | | |
| | | N _{ts} = | >300 | | N _{ts} < 100 ? | No | | |

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Table 14: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: *Candida albicans* Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) Product concentration: 100,00 % | | |
|------------------------------------|-----|----|--|----|----|--|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-05 | 100 | 76 | 1,00E-03 | 36 | 30 | 1,00E-03 | 30 | 25 |
| 1,00E-06 | 29 | 20 | 1,00E-04 | 10 | 2 | 1,00E-04 | 2 | 2 |
| 0 = 4,40E+05 = 5,64 lg | | | 0 = 3,30E+05 = 5,52 lg | | | 0 = 2,75E+05 = 5,44 lg | | |
| 5,57 ≤ lg N ≤ 6,1 ? Yes | | | lg N - lg N _c ≤ ±0,3 ? Yes | | | lg N _c - lg N _T ≤ ±0,3 ? Yes | | |

| Water control | Water control (N _c): | N _c | a | a' | 0 = 3,30E+05 lg N _c = 5,52 lg N - lg N _c ≤ 2 lg ? Yes |
|---------------|----------------------------------|----------------|----|----|---|
| | | 1,00E-03 | 33 | 33 | |
| | | 1,00E-04 | 4 | 2 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lg N _c = 5,52) | Exposure time (min) |
|--------|--|-------------------|------|------|--|--------------------------------------|----------------------------------|---------------------|
| 10,00 | | 1,00E+00 | >300 | >300 | 7,20E+03 | 3,86 | 1,66 | 1 |
| | | 1,00E-01 | 60 | 84 | | | | |
| | | 1,00E-02 | 10 | 16 | | | | |
| | | N _{ts} = | 29 | | N _{ts} < 100 ? | Yes | | |
| 50,00 | | 1,00E+00 | >300 | >300 | 1,08E+05 | 5,03 | 0,49 | 1 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 108 | 108 | | | | |
| | | N _{ts} = | >300 | | N _{ts} < 100 ? | No | | |
| 100,00 | | 1,00E+00 | >300 | >300 | 8,20E+04 | 4,91 | 0,60 | 1 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 94 | 70 | | | | |
| | | N _{ts} = | 106 | | N _{ts} < 100 ? | No | | |

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Table 15: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: *Candida albicans* Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) Product concentration: 100,00 % | | |
|------------------------------------|----|----|--|---|----|--|----|----|
| | x | x' | | a | a' | | a | a' |
| 1,00E-05 | 70 | 30 | 1,00E-03 | 8 | 12 | 1,00E-03 | 10 | 10 |
| 1,00E-06 | 14 | 18 | 1,00E-04 | 0 | 0 | 1,00E-04 | 0 | 0 |
| 0 = 2,50E+05 = 5,40 lg | | | 0 = 1,00E+05 = 5,00 lg | | | 0 = 1,00E+05 = 5,00 lg | | |
| 5,57 ≤ lg N ≤ 6,1 ? No | | | lg N - lg N _c ≤ ±0,3 ? Yes | | | lg N _c - lg N _T ≤ ±0,3 ? Yes | | |

| Water control | Water control (N _c): | N _c | a | a' | 0 = |
|---------------|----------------------------------|----------------|----|----|--|
| | | 1,00E-03 | 20 | 26 | 2,30E+05 |
| | | 1,00E-04 | 0 | 0 | lg N _c = 5,36 |
| | | | | | lg N - lg N _c ≤ 2 lg ? Yes |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lg N _c = 5,36) | Exposure time (min) |
|--------|--|-------------------|-----|-------------------------|--|--------------------------------------|----------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | 8 | 10 | < 1,40E+02 | < 2,15 | > 3,22 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | Yes | | | |
| 50,00 | | 1,00E+00 | 120 | 120 | 1,20E+03 | 3,08 | 2,28 | 5 |
| | | 1,00E-01 | 10 | 11 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 22 | N _{ts} < 100 ? | Yes | | | |
| 100,00 | | 1,00E+00 | 1 | 4 | < 1,40E+02 | < 2,15 | > 3,22 | 5 |
| | | 1,00E-01 | 0 | 0 | | | | |
| | | 1,00E-02 | 0 | 0 | | | | |
| | | N _{ts} = | 0 | N _{ts} < 100 ? | Yes | | | |

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Table 16: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Aspergillus niger Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) Product concentration: 100,00 % | | |
|------------------------------------|----|----------------|------------------------------------|------|------|--|---|---------|
| | x | x' | | a | a' | | a | a' |
| 1,00E-05 | 25 | 19 | 1,00E-03 | >300 | >300 | 1,00E-03 | 5 | 5 |
| 1,00E-06 | 1 | 1 | 1,00E-04 | >300 | >300 | 1,00E-04 | 0 | 0 |
| 0 = 1,10E+05 = | | 5,04 lg | 0 = n.c. | | n.c. | 0 = 5,00E+04 = | | 4,70 lg |
| 5,57 ≤ lg N ≤ 6,1 ? | | No | lgN – lgN _c ≤ ±0,3 ? | | n.c. | lgN _c – lgN _T ≤ ±0,3 ? | | n.c. |

| Water control (N _c): | N _c | a | a' | 0 = 2,00E+07 lgN _c = 7,30 lgN – lgN _c ≤ 2 lg ? Yes |
|-------------------------------------|----------------|-----|-----|--|
| | 1,00E-04 | 300 | 100 | |
| | 1,00E-05 | 10 | 10 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c = 7,30) | Exposure time (min) |
|--------|--|-------------------|------|-------------------------|--|--------------------------------------|---------------------------------|---------------------|
| 10,00 | | 1,00E+00 | >300 | >300 | 5,15E+04 | 4,71 | 2,59 | 0,5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 44 | 59 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |
| 50,00 | | 1,00E+00 | >300 | >300 | 7,20E+04 | 4,86 | 2,44 | 0,5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 80 | 64 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |
| 100,00 | | 1,00E+00 | >300 | >300 | 7,10E+04 | 4,85 | 2,45 | 0,5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 92 | 50 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |

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Table 17: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Aspergillus niger Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) Product concentration: 100,00 % | | |
|------------------------------------|----|----------------|------------------------------------|------|------|--|---|---------|
| | x | x' | | a | a' | | a | a' |
| 1,00E-05 | 25 | 19 | 1,00E-03 | >300 | >300 | 1,00E-03 | 5 | 5 |
| 1,00E-06 | 1 | 1 | 1,00E-04 | >300 | >300 | 1,00E-04 | 0 | 0 |
| 0 = 1,10E+05 = | | 5,04 lg | 0 = n.c. | | n.c. | 0 = 5,00E+04 = | | 4,70 lg |
| 5,57 ≤ lg N ≤ 6,1 ? | | No | lgN – lgN _c ≤ ±0,3 ? | | n.c. | lgN _c – lgN _T ≤ ±0,3 ? | | n.c. |

| Water control | Water control (N _c): | N _c | a | a' | 0 = 1,03E+08 lgN _c = 8,01 lgN – lgN _c ≤ 2 lg ? Yes |
|---------------|----------------------------------|----------------|------|------|--|
| | | 1,00E-04 | >300 | >300 | |
| | | 1,00E-05 | 100 | 106 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c = 8,01) | Exposure time (min) |
|--------|--|-------------------|------|-------------------------|--|--------------------------------------|---------------------------------|---------------------|
| 10,00 | | 1,00E+00 | >300 | >300 | 5,80E+04 | 4,76 | 3,25 | 1 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 62 | 54 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |
| 50,00 | | 1,00E+00 | >300 | >300 | 9,50E+04 | 4,98 | 3,04 | 1 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 70 | 120 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |
| 100,00 | | 1,00E+00 | >300 | >300 | 8,90E+04 | 4,95 | 3,06 | 1 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 84 | 94 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |

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Table 18: Validation, Controls and Evaluation (DIN EN 13697: 2001*)

Quantitative Non-Porous Surface Test for Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants Used in Food, Industrial, Domestic, and Institutional Areas (DIN EN 13697:2001*; Phase 2/Step 2)

Test preparation: **SurfaceCare** Batch: 170610
Test organism: Aspergillus niger Test temperature: 20°C±2°C
Organic load: dirty conditions (0.3 % bovine albumin) Inactivation: TLS-SDS

| Test and validation suspension (N) | | | Toxicity control (N _c) | | | Validation neutralisation medium / Neutralisation control (N _T) Product concentration: 100,00 % | | |
|------------------------------------|----|----------------|------------------------------------|------|------|--|---|---------|
| | x | x' | | a | a' | | a | a' |
| 1,00E-05 | 25 | 19 | 1,00E-03 | >300 | >300 | 1,00E-03 | 5 | 5 |
| 1,00E-06 | 1 | 1 | 1,00E-04 | >300 | >300 | 1,00E-04 | 0 | 0 |
| 0 = 1,10E+05 = | | 5,04 lg | 0 = n.c. | | n.c. | 0 = 5,00E+04 = | | 4,70 lg |
| 5,57 ≤ lg N ≤ 6,1 ? | | No | lgN – lgN _c ≤ ±0,3 ? | | n.c. | lgN _c – lgN _T ≤ ±0,3 ? | | n.c. |

| Water control | Water control (N _c): | N _c | a | a' | 0 = 1,70E+05 lgN _c = 5,23 lgN – lgN _c ≤ 2 lg ? Yes |
|---------------|----------------------------------|----------------|----|----|--|
| | | 1,00E-03 | 13 | 21 | |
| | | 1,00E-04 | 1 | 3 | |

| Test | Concentration of product test solution % | Dilution step | a | a' | N _d (0 v 0 wm) cfu/ml | lg N _d = lg (0 v 0 wm) | ME (lgN _c =5,23) | Exposure time (min) |
|--------|--|-------------------|------|-------------------------|--|--------------------------------------|--------------------------------|---------------------|
| | | | | | | | | |
| 10,00 | | 1,00E+00 | >300 | >300 | 5,80E+04 | 4,76 | 0,47 | 5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 42 | 74 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |
| 50,00 | | 1,00E+00 | >300 | >300 | 9,10E+04 | 4,96 | 0,27 | 5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 100 | 82 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |
| 100,00 | | 1,00E+00 | >300 | >300 | 8,00E+04 | 4,90 | 0,33 | 5 |
| | | 1,00E-01 | >300 | >300 | | | | |
| | | 1,00E-02 | 76 | 84 | | | | |
| | | N _{ts} = | >300 | N _{ts} < 100 ? | No | | | |

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4 List of Abbreviations

| | | |
|-----------------|---|--|
| cfu | = | colony forming units (viable microbial count) |
| N | = | test suspension |
| N _c | = | log ₁₀ cfu per test surface of water control |
| N _d | = | log ₁₀ cfu per test surface of disinfection test |
| N _T | = | neutralisation test |
| N _C | = | neutralisation control |
| N _{is} | = | remaining cfu on test surface |
| ME | = | germicidal activity (N _c – N _d) |
| n.c. | = | not calculable |
| n.t. | = | nottested |
| x, x' | = | viable microbial count per ml of the test suspension |
| a, a' | = | viable microbial count per ml of the suspension after examination and validation |
| 0 | = | mean of a and a' and x and x' |

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Method DIN EN 13697:2001*

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