



GMC-I Messtechnik
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Hygiene evaluation on the effectiveness of disinfection of SECULIFE HIT MD multimeter of the GMC-I company

The commission was to examine whether the SECULIFE HIT MD can be used in medical areas in which disinfection can become necessary due to a high risk for transmission of infectious agents. The disinfection must be ensured in these areas of hospitals to exclude any risk for the patient outgoing from these potentially contaminated surfaces. The examinations were accomplished in analogy and in accordance with the specifications of the German Society for Hygiene and Microbiology (DGHM) for disinfection methods under practical conditions.

Test completion

The examining object was contaminated heavily with the test germs in a defined concentration on areas relevant and presumably difficult to degerm. After a complete drying of the examining places tests were run with the alcoholic disinfectants mikrozid® wipes of the Schülke company for an alcohol-based rapid disinfection of medical devices in all areas with an increased risk of infection and where short contact times are required and additionally with mikrozid® wipes PAA a peracetic acid based product for a rapid active oxygen based disinfection.

The object was then subjected to a quantitative, microbiological examination in the recovery and culture test. 10 contamination points were chosen, the examinations were repeated five times, so 80 test positions came along.

Test organisms and bacterial concentration in test solution

The microorganism types recommended by the DGHM for testing bactericidal and fungicidal effects were used as test organisms.

<i>Staphylococcus aureus</i>	ATCC* 29213	1.1 x 10 ⁴ cfu/ml***
<i>Enterococcus faecium</i>	ATCC 6057	0.6 x 10 ⁴ cfu/ml
<i>Enterococcus hirae</i>	DSM** 3320	0.3 x 10 ⁵ cfu/ml
<i>Escherichia coli</i>	DSM 11250	1.1 x 10 ⁴ cfu/ml
<i>Pseudomonas aeruginosa</i>	ATCC 15442	0.6 x 10 ⁴ cfu/ml
<i>Proteus mirabilis</i>	ATCC 14153	2.7 x 10 ⁴ cfu/ml
<i>Candida albicans</i>	ATCC 10231	1.0 x 10 ⁴ cfu/ml
<i>Aspergillus niger</i>	ATCC 16404	1.6 x 10 ⁴ cfu/ml

* ATCC = American Type Culture Collection

** DSM = Deutsche Sammlung von Mikroorganismen, German Collection of Microorganisms

*** Cfu/ml = colony forming units per millilitre

5.1.1. *Staphylococcus aureus* ATCC 29213

	<i>Mikrozyd</i>	<i>Mikrozyd PAA</i>	<i>Reduction rate (log10)</i>
5 x upside	sterile	sterile	4.04
5 x bottom	sterile	sterile	4.04
Reduction rate			4.04

5.1.2. *Enterococcus faecium* ATCC 6057

	<i>Mikrozyd</i>	<i>Mikrozyd PAA</i>	<i>Reduction rate (log10)</i>
5 x upside	sterile	sterile	3.78
5 x bottom	sterile	sterile	3.78
Reduction rate			3.78

5.1.3. *Enterococcus hirae* DSM 3320

	<i>Mikrozyd</i>	<i>Mikrozyd PAA</i>	<i>Reduction rate (log10)</i>
5 x upside	sterile	sterile	4.47
5 x bottom	sterile	sterile	4.47
Reduction rate			4.47

5.1.4. *Escherichia coli* DSM 11250

	<i>Mikrozyd</i>	<i>Mikrozyd PAA</i>	<i>Reduction rate (log10)</i>
5 x upside	sterile	sterile	4.04
5 x bottom	sterile	sterile	4.04
Reduction rate			4.04

5.1.5. *Pseudomonas aeruginosa* ATCC 15442

	<i>Mikrozyd</i>	<i>Mikrozyd PAA</i>	<i>Reduction rate (log10)</i>
5 x upside	sterile	sterile	3.78
5 x bottom	sterile	sterile	3.78
Reduction rate			3.78

5.1.6. *Proteus mirabilis* ATCC 14153

	<i>Mikrozid</i>	<i>Mikrozid PAA</i>	<i>Reduction rate (log10)</i>
5 x upside	sterile	sterile	4.38
5 x bottom	sterile	sterile	4.38
Reduction rate			4.38

5.1.7. *Candida albicans* ATCC 10231

	<i>Mikrozid</i>	<i>Mikrozid PAA</i>	<i>Reduction rate (log10)</i>
5 x upside	sterile	sterile	4.00
5 x bottom	sterile	sterile	4.00
Reduction rate			4.00

5.1.8. *Aspergillus niger* ATCC 16404

	<i>Mikrozid</i>	<i>Mikrozid PAA</i>	<i>Reduction rate (log10)</i>
5 x upside	sterile	sterile	4.20
5 x bottom	sterile	sterile	4.20
Reduction rate			4.20

Results and assessment

The measured values yielded a diminution of 4 log₁₀ steps for all tested species. This reduction fulfils the criteria for an effective disinfection.

The GMC-I multimeter SECULIFE HIT MD can be disinfected with both alcohol based and peracetic acid based products. A safe disinfection is ensured.

The GMC-I multimeter SECULIFE HIT MD exhibits a high hygienic standard and is well suited for use in hygienically sensitive areas such as hospitals, nursing homes, laboratories, practices and food industry.

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Prof. Dr. R. Mutters