

# HWR-CHEMIE GmbH®

Moosfeldstraße 7 · D-82275 Emmering  
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## CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

### Antimicrobial efficacy of BOWI-SEPT® (article no. 2760)

#### 1 Bactericidal / Fungicidal performance

##### 1.1 Tested according to VAH (*Association for Applied Hygiene*)

Mechanical disinfection of non porous hard surfaces in hospital and general practice:

Test strains: *P. aeruginosa*, *S. aureus*, *E. hirae* and *C. albicans*

Results:	6.0 %	dirty conditions	5 min.
	2.0 %	dirty conditions	15 min.
	1.0 %	dirty conditions	30 min.
	1.0 %	dirty conditions	60 min.

Certificates: Dr. Brill + Partner, Hamburg, 9 January 2018; 25 June 2019

Prof. Dr. Werner, HygCen, Schwerin, 12 December 2017; 11 June 2019

##### 1.2 Salmonellacidal efficacy

Test method: DGHM qualitative suspension test (without organic load)

Test organism: *Salmonella typhimurium*

Results:	0.25 %	5 minutes
	0.05 %	15, 30, 60 minutes

Certificate: Prof. Dr. H.-P. Werner, Schwerin, 31 January 2003

##### 1.3 Tested according to European Norms (EN)

###### EN 1276

Bactericidal results (log 5), in presence of high organic load

Test strains: *E. coli* ATCC 10536, *S. aureus* ATCC 6538, *E. hirae* ATCC 10541,  
*P. aeruginosa* ATCC 15442

Results:	1.5 %	3.0 g/l BSA	5 min.
	1.5 %	10.0 g/l Skimmed milk	5 min.
	1.0 %	10.0 g/l Sucrose	5 min.
	1.5 %	10.0 g/l Yeast extract	5 min.

Certificate: Eurofins, 31 May 2016

###### EN 1276

Bactericidal result (log 5), in presence of high organic load

Test strains: *L. monocytogenes* ATCC 15313, *S. typhimurium* ATCC 13311

Result:	0.5 %	3.0 g/l BSA	5 min.
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Certificate: Dr. Brill + Partner GmbH, 24 February 2017

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## CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

### EN 1276

Bactericidal result (log 5), in presence of low organic load

Test strains: *S. aureus* ATCC 6538, *E. coli* ATCC 10536, *E. hirae* ATCC 10541,  
*P. aeruginosa* ATCC 15442

Result:	0.5 %	0.3 g/l BSA	10 min.
	0.25 %	0.3 g/l BSA	20 min.

Certificate: Dr. Brill + Partner GmbH, 14 March 2018

### EN 1276 (modified)

Bactericidal result (log 4), in presence of low organic load

Test strain: *L. interrogans* (Weil's disease)

Result:	1.0 %	0.3 g/l BSA	5 min.
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Certificate: Blue Scientific Test Data, August 2009

### EN 1276 (MRSA)

Bactericidal result (log 5), in presence of high organic load

Test strain: *S. aureus* MRSA ATCC 33592

Result:	1.0 %	3.0 g/l BSA	5 min.
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Certificate: L + S AG, June 2010

### EN 1650

Yeasticidal result (log 4), in presence of high organic load

Test strain: *C. albicans* ATCC 10231

Result:	0.5 %	3.0 g/l BSA	15 min.
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Certificate: Eurofins, 31 May 2016

### EN 1650

Yeasticidal result (log 4), in presence of low organic load

Test strain: *C. albicans* ATCC 10231

Result:	0.25 %	0.3 g/l BSA	10 min.
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Certificate: Dr. Brill + Partner GmbH, 14 March 2018

### EN 1650

Fungicidal result (log 4), in presence of low organic load

Test strain: *A. brasiliensis* (formerly known as *A. niger*)

Result:	2.5 %	0.3 g/l Albumin	15 min.
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Certificate: Eurofins, 17 June 2011

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## CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

### EN 1656

Bactericidal results (log 5), in presence of high veterinary organic load at 10°C  
Test strains: *P. aeruginosa* ATCC 15442, *S. aureus* ATCC 6538, *E. hirae* ATCC 10541 and  
*P. vulgaris* ATCC 13315

Result: 4.0 % 10 g/l Yeast extract + 10 g/l BSA 30 min.

Certificate: Eurofins, 31 May 2016

### EN 1657

Yeasticidal result (log 4), in presence of high veterinary organic load at 10°C  
Test strain: *C. albicans* ATCC 10231

Result: 2.0 % 10 g/l Yeast extract + 10 g/l BSA 30 min.

Certificate: Eurofins, 31 May 2016

### EN 13624

Yeasticidal result (log 4), in presence of high medical organic load  
Test strain: *C. albicans* ATCC 10231

Result: 1.0 % 3.0 g/l BSA + Erythrocytes 5 min.  
0.25 % 3.0 g/l BSA + Erythrocytes 60 min.

Certificate: Eurofins, 31 May 2016

### EN 13624

Fungicidal result (log 4), in presence of high medical organic load  
Test strain: *A. brasiliensis* (formerly known as *A. niger*)

Result: 4.0 % 3.0 g/l BSA + Erythrocytes 60 min.

Certificate: Eurofins, 6 June 2016

### EN 13697

Bactericidal result (log 4), in presence of high organic load  
Test strains: *E. coli* ATCC 10536, *S. aureus* ATCC 6538, *E. hirae* ATCC 10541,  
*P. aeruginosa* ATCC 15442

Result: 2.5 % 3.0 g/l BSA 5 min.

Certificate: Eurofins-Biolab Spa, 30 July 2007

### EN 13697

Bactericidal result (log 4), in presence of high organic load  
Test strain: *L. monocytogenes* ATCC 15313

Result: 1.5 % 3.0 g/l BSA 5 min.

Test strain: *S. typhimurium*

Result: 3.0 % 3.0 g/l BSA 5 min.

Certificate: Dr. Brill + Partner GmbH, 24 February 2017

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## CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

### EN 13697

Bactericidal result (log 4), in presence of low organic load

Test strains: *S. aureus* ATCC 6538, *E. coli* ATCC 10536, *E. hirae* ATCC 10541,  
*P. aeruginosa* ATCC 15442

Result:	0.5 %	0.3 g/l BSA	15 min.
	0.5 %	0.3 g/l BSA + 8.5 g/l skimmed milk for <i>P. aeruginosa</i>	10 min.

Certificate: Dr. Brill + Partner GmbH, 14 March 2018

### EN 13697

Bactericidal result (log 4), in presence of high medical organic load

Test strains: *S. aureus* ATCC 6538, *E. hirae* ATCC 10541, *P. aeruginosa* ATCC 15442

Result:	7.0 %	3.0 g/l BSA + Erythrocytes	5 min.
	1.0 %	3.0 g/l BSA + Erythrocytes	60 min.

Certificate: Eurofins, 6 June 2016

### EN 13697

Yeasticidal result (log 3), in presence of high organic load

Test strain: *C. albicans* ATCC 10231

Result:	2.0 %	3.0 g/l BSA	15 min.
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Certificate: Eurofins, 31 May 2016

### EN 13697

Yeasticidal result (log 3), in presence of low organic load

Test strain: *C. albicans* ATCC 10231

Result:	0.25 %	0.3 g/l BSA	10 min
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Certificate: Dr. Brill + Partner GmbH, 14 March 2018

### EN 13697

Yeasticidal result (log 3), in presence of high medical organic load

Test strain: *C. albicans* ATCC 10231

Result:	3.0 %	3.0 g/l BSA + Erythrocytes	5 min.
	1.0 %	3.0 g/l BSA + Erythrocytes	60 min.

Certificate: Eurofins, 6 June 2016

### EN 13697

Fungicidal result (log 3), in presence of high organic load

Test strain: *A. brasiliensis* (formerly known as *A. niger*)

Result:	4.0 %	3.0 g/l Albumin	15 min.
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Certificate: Eurofins-Biolab Spa, 23 April 2007

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## CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

### EN 13704

Sporicidal activity (log 3), in presence of low organic load

Test strain: *C. difficile* ATCC 9689

Result: 5.0 % 0.3 g/l BSA 60 min.

Certificate: Dr. Brill + Partner GmbH, 13 March 2009

### EN 13704

Sporicidal activity (log 3), in presence of low organic load

Test strain: *B. subtilis* ATCC 6633

Result: 5.0 % 0.3 g/l BSA 60 min.

Certificate: L+S, 23 April 2012

### EN 13704

Sporicidal activity (log 3), in presence of low organic load

Test strain: *B. cereus* ATCC 12826

Result: 4.0 % 0.3 g/l BSA 60 min.

Certificate: Eurofins, 31 May 2016

### EN 13727

Bactericidal result (log 5), in presence of high medical organic load

Test strains: *S. aureus* ATCC 6538, *E. hirae* ATCC 10541, *P. aeruginosa* ATCC 15442

Results: 2.0 % 3.0 g/l BSA + Erythrocytes 5 min.  
1.0 % 3.0 g/l BSA + Erythrocytes 60 min.

Certificate: Eurofins, 17 June 2011

### EN 14349 (non-porous surfaces)

Bactericidal result (log 4), in presence of high veterinary organic load at 10°C

Test strains: *P. aeruginosa* ATCC 15442, *S. aureus* ATCC 6538, *E. hirae* ATCC 10541 and *P. vulgaris* ATCC 13315

Result: 6.0% 10.0 g/l Yeast extract + BSA 30 min.

Certificate: Eurofins, 31 May 2016

### EN 14561

Bactericidal result (log 5), in presence of low organic load at 10°C

Test strains: *S. aureus* ATCC 6538, *E. hirae* ATCC 10541, *P. aeruginosa* ATCC 15442

Result: 2.5 % 0.3 g/l BSA 15 min.

Certificate: Eurofins, 23 September 2011

### EN 14562

Yeasticidal result (log 4), in presence of low organic load

Test strain: *C. albicans* ATCC 10231

Result: 3.0 % 0.3 g/l BSA 15 min.

Certificate: Eurofins, 23 September 2011

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## CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

### EN 16438

Yeasticidal result (log 3), in presence of high veterinary organic load at 10°C

Test strain: *C. albicans* ATCC 10231

Results:	2.0 %	10 g/l Yeast extract + 10 g/l BSA	30 min.
	1.0 %	10 g/l Yeast extract + 10 g/l BSA	60 min.

Certificate: Dr Brill + Dr Steinmann, 5 October 2016; Eurofins, 31 May 2016

### EN 16615

Bactericidal results (log 5), in presence of high medical organic load

Test strains: *S. aureus* ATCC 6538, *E. hirae* ATCC 10541, *P. aeruginosa* ATCC 15442

Result:	6.0%	3.0 g/l BSA + 3.0 g/l Erythrocytes	5 min.
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Certificate: Dr. Brill + Partner GmbH, 28 July 2017

### EN 16615

Yeasticidal results (log 4), in presence of high medical organic load

Test strain: *C. albicans* ATCC 10231

Result:	4.0 %	3.0 g/l BSA + 3.0 g/l Erythrocytes	1 min.
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Certificate: Dr. Brill + Partner GmbH, 28 July 2017

## 2 Virucidal performance

### 2.1 Tested according to BGA (now RKI) / DVV

#### Poliovirus

With soil load	5.0 %	15 min.
	4.0 %	60 min.

Certificate: Dr. J. Steinmann, Bremen, 15 Feb 2002

#### ECBO Virus

With soil load	5.0 %	30 min.
	3.0 %	60 min.

Certificate: Dr. J. Steinmann, Bremen, 21 Aug 2002

#### Adenovirus

With soil load	4.0 %	30 min.
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Certificate: Dr. J. Steinmann, Bremen, 24 May 2005

#### Norovirus

Test strain: Feline calici virus (FCV)

With soil load	4.0 %	30 min.
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Certificate: Dr. J. Steinmann, Bremen, 25 May 2005





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## CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

### EN 14476

Virucidal result (log 4), in presence of low and high medical organic load  
Test strain: Adenovirus Type 5 strain Adenoid 75

Results:	2.0 %	0.3 g/l BSA	15 min.
	2.0 %	3.0 g/l BSA + Erythrocytes	60 min.
	4.0 %	3.0 g/l BSA + Erythrocytes	15 min.

Certificate: Dr. J. Steinmann, MikroLab, 27 July 2010

### EN 14476

Virucidal result (log 4), in presence of low and high medical organic load  
Test strain: Murine Norovirus strain S99 Berlin

Results:	2.0 %	0.3 g/l BSA	5 min.
	2.0 %	3.0 g/l BSA + Erythrocytes	15 min.

Certificate: Dr. J. Steinmann, MikroLab, 1 April 2014

After evaluation with Poliovirus, Adenovirus and MNV (murine Norovirus) the surface disinfectant can be declared as having "virucidal" properties according to EN 14476. Therefore, after successful experiments with the above mentioned non-enveloped viruses the surface disinfectant is also effective against enveloped viruses including **HBV**, **HCV** and **HIV** (blood-borne viruses), all members of the Coronaviridae family incl. MERS-CoV, the Filoviridae family incl. Ebola virus and the Paramyxoviridae family incl. Measles virus.

Results:	4.0%	0.3 g/l BSA	30 min.
	6.0%	3.0 g/l BSA + Erythrocytes	120 min.

Statements: Dr. J. Steinmann, 8 March 2015

### EN 14476

Virucidal result (log 4), in presence of high medical organic load  
Test strain: Influenza A (H7N9) Virus

Result:	0.5 %	3.0 g/l BSA + Erythrocytes	5 min.
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Certificate: Microbac Laboratory, Sterling VA20164 (USA), 13 September 2013

### EN 14476

Virucidal result (log 4), in presence of high medical organic load  
Test strain: Duck Hepatitis B (as a surrogate for Hepatitis B (HBV))

Result:	5.0 %	3.0 g/l BSA + Erythrocytes	5 min.
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Certificate: Blu Test Laboratories Ltd., 27 July 2016

### EN 14476

Virucidal result (log 4), in presence of low organic load  
Test strain: Bovine Corona Virus (BCoV) (as a surrogate for other members of the Coronavirus family including MERS-CoV)

Result:	1.0 %	0.3 g/l BSA	1 min.
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Certificate: Dr. J. Steinmann, MikroLab, 25 May 2014



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## CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

### EN 14476:2013 + A1:2015

Virucidal result (log 4), in presence of high medical organic load  
Test strain: Modified Vaccinia Virus Ankara (MVA)

Result: 1.0 % 3.0 g/l BSA + 3.0 g/l Erythrocytes 5 min.

Certificate: Dr. J. Steinmann, Dr. Brill + Partner GmbH, Bremen, 7 February 2017

After evaluation with Poliovirus, Adenovirus and MNV (murine Norovirus) the surface disinfectant can be declared as having "virucidal" properties according to EN 14476. Furthermore, the surface disinfectant has passed prEN 16777, which is a viral surface test. prEN 16777, which was introduced in 2016, is based on similar methodology to EN 13697.

### EN 14476:2013 + A1:2015

Virucidal result (log 4), in presence of high medical organic load  
Test strain: Influenza A (H1N1) Virus

Result: 0.5 % 3.0 g/l BSA + 3.0 g/l Erythrocytes 5 min.

Certificate: Dr. J. Steinmann, Dr. Brill + Partner GmbH, Bremen, 8 February 2017

### EN 14675

Virucidal result (log 4), in presence of high-level soiling at 10°C  
Test strain: Modified Vaccinia Virus Ankara (MVA)

Result: 3.0 % 10.0 g/l Yeast extract + 10.0 g/l BSA 30 min.

Certificate: Dr. J. Steinmann, Dr. Brill + Partner GmbH, Bremen, 25 January 2017

### prEN 16777

Virucidal result (log 4), in presence of high medical organic load  
Test strain: Adenovirus Type 5 strain Adenoid 75

Result: 5.0 % 3.0 g/l BSA + 3.0 g/l Erythrocytes 60 min.

Certificate: Eurofins, 23 June 2017

## 2.3 Tested according other procedures

### Canine parvovirus (type-2)

With soil load 1:35 diluted in deionized water 10 min.

1:35 diluted in 400 ppm AOAC hard water 10 min.

Certificate: MICROBIOTEST Inc., Sterling, Virginia, USA, Study 163-238, 03. Jan 2003

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## CHEMISCH-TECHNISCHE SPEZIALPRODUKTE

### 3. Materials Compatibility

Samples of materials which were tested:

- Anodized aluminium
- Aluminium coated with powder technology
- Nickel plated mild steel
- Polished martensitic steel
- Stainless steel coated with gold
- Polyethylene
- Polymethacrylmethacrylate
- Composite material from tungsten carbide and nickel
- Linoleum
- Polyvinylchloride flooring
- Flexible polyvinylchloride tube
- Two types of butyl rubber
- Optical glasses made from polycarbonate
- Optical glasses made from silicate

Product test concentration: 3.0 %

Test conditions: submersion of material samples at 20°C for up to 30 days

update: May 2020