Cambridge Scientific Technologies Limited

DXT55 Veterinary

Effective against

H5N1 & H3N8 Avian Influenza

H1N1 Swine ‘Flu

Newcastle’s Disease

Benefits

Aldehyde-free Disinfectant Cleaner – Broad spectrum of efficacy; bacteria (incl. medical dirty conditions), fungi, enveloped & non-enveloped viruses and C. difficile spores

Cleans and disinfects in the presence of dirt, blood and proteins — DVG and VAH compliant

Technical User Information

DXT55 is an aldehyde free, high performance disinfectant cleaner with outstanding microbiocidal performance and broad-spectrum activity against bacteria, fungi, viruses and spores. Its efficacy against *C. difficile* spores and different types of viruses matches perfectly to the use of this formulation around hospitals, long term care facilities and institutions. It can also be used in restaurants, food processing plants and schools as well.

Ingredients

Actives	
Didecyl dimethyl ammonium chloride	approx. 6.9%

Inerts	
Water, chelating agents, surfactants	approx. 93.1%

Efficacy Data

Use Dilutions

Hospital High Performance	Hospital Routine	Institutional	At Low Temperature	*C. Diff* Efficacy
50 ml/l, 15 min.	25 ml/l, 5 min.	25 ml/l, 5 min.	30 ml/l, 30 min.	50 ml/l, 60 min.

Hospital – Surface Disinfection

If a contamination with pathogens is feared or known, high level disinfection or another appropriate measure has to be taken to protect third persons and staff. General hospital surfaces, such as floors or surfaces in patient's rooms should be treated with a mid-level disinfectant cleaner such as DXT55.

High Performance Disinfection in Presence of Organic Load
(tested according to VAH, RKI and EN 14476 guidelines)

50 ml/l	15 min. contact time
(Full efficacy against bacteria, fungi (incl. *A. brasiliensis* (formally known as *A. niger*)) and non-enveloped viruses)	

Routine Disinfection of Surfaces
(tested according to EN 13697 guidelines)

25 ml/l	5 min. contact time
(for inactivating Gram pos. and Gram neg. bacteria, yeasts and enveloped viruses under high soiling conditions)	

40 ml/l	15 min. contact time
(for inactivating fungi, e.g. *A. brasiliensis* (formally known as *A. niger*))	

Institutions, Sport and Leisure, Food & Beverage – Surface Disinfection

(Schools, fitness centres, restaurants)

For industrial and institutional applications, contamination with pathogens seldom occurs. However, disinfection is necessary to avoid transmission of bacteria, fungi and viruses.

Routine Disinfection of Surfaces
(tested according to EN13697 guidelines)

25 ml/l (dirty)	5 min. contact time
(for inactivating Gram pos. and Gram neg. bacteria, yeasts and enveloped viruses)	

Efficacy at Low Temperature

(Food processing / storage, restaurants)

In food preparation areas, the performance of disinfectants is critical across a wide range of temperatures. A reduction in temperature reduces the efficacy of every disinfectant. As a consequence, in cool areas the concentration of the product has to be increased or the duration time or both.

Inactivation of Bacteria at 10°C (tested according to EN 1656)

20 ml/l (clean)	30 ml/l (dirty)	30 min. contact time

Inactivation of Fungi at 10°C (tested according to EN 1657)

20 ml/l (clean)	30 min. contact time

Spore-Forming Bacteria (tested according to EN 13704)

50 ml/l (dirty)	60 min. contact time

Use Information

Direction of Use

Remove heavy soil deposits from surface. Then thoroughly wet surface with the appropriate dilution of the concentrate per litre of water depending on the application. The use-solution can be applied with a cloth, mop, sponger or by soaking. Rinse or allow to air dry. Rinsing of floors is not necessary unless they are to be waxed or polished. Prepare a fresh solution daily or more often if the solution becomes visibly dirty or diluted.

Use Restriction

This product is not to be used as a terminal sterilant/high level disinfectant on any surface or instrument that:

1. is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body, or
2. contacts intact mucous membranes but which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body.

Detailed Efficacy Data

Introduction

The European Standard EN14885 specifies the laboratory methods to be used for testing the activity of the chemical disinfectants. These standards only refer to test methods which are currently included in the work programme of the Technical Committee CEN/TC 216 and are summarized by the EN 14885 Standard (Chemical Disinfectants and Antiseptics-Application of European Standards for Chemical Disinfectants and Antiseptics).

Tests and pass criteria were and are currently under development for the areas of application “medical”, “veterinary” and “food, domestic and institutional areas”.

The CEN standards relate only to a limited range of microbial species. These have been chosen as representatives for each method to be used to substantiate claims of products (e.g. bactericide, fungicide, sporicide, tuberculocide and mycobactericide) taking into account their relevance to practical use for each of the three mentioned application areas. This ensures the efficacy claimed by the product also for all the other species showing the same characteristics (e.g. EN 1276 covers all the Gram positive and negative bacteria. Mycobacteria and spore-forming bacteria are excluded) for a specific area of use (hospital, food processing/ storage, institutional, veterinary). As a general rule, freshly prepared working solutions – if possible every day – must be used. The dilution concentrations specified on the product must be exactly observed for a good efficacy of the product.

Antimicrobial Performance

Bactericidal / Fungicidal Performance

Tested According to European Norms (EN)

EN 1040

Bactericidal result (log 5).
Test strains: *P. aeruginosa* and *S. aureus*

Result	0.025 %	5 min.
Certificate:	Lonza Basel, laboratory OPC-E, 30 July 2004	

EN 1276

Bactericidal results (log 5), in the presence of high organic load (Albumin)
Test strains: *P. aeruginosa*, *S. aureus*

Result	20°C	2.0 %	3.0 g/l Albumin	5 min.
Certificate:	(GLP) Eurofins, 9 August 2011			
Result	10°C	2.0 %	3.0 g/l Albumin	5 min.
Certificates:	Lonza Basel, laboratory OPC-E, 13 January 2006			

EN 1276 (modified)

Bactericidal result (log 4), in presence of low organic load (Albumin)
Test strains: *L. interrogans* (Weil’s disease)

Result	1.0 %	0.3 g/l Albumin	5 min.
Certificate:	Blue Scientific Test Data, Glasgow (UK), August 2009		

EN 1276 (MRSA)

Bactericidal result (log 5), in presence of high organic load (Albumin) Test strains: *S. aureus* MRSA ATCC 33592

Result	20°C	1.0 %	3.0 g/l Albumin	5 min.
Certificate:	L + S AG, Bad 20° C Bocklet (Germany), June 2010			

EN 1650

Fungicidal result (log 4), in presence of low organic load (Albumin) Test strains: *A. brasiliensis* (formally known as *A. niger*) and *C. albicans*

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

EN 13697 (surface test)

Bactericidal result (log 4), in presence of high organic load (Albumin)
Test strains: *P. aeruginosa*, *S. aureus*, *E. coli* and *E. hirae*

Result	2.5 %	3.0 g/l Albumin	5 min.

Fungicidal result (log 3), in presence of high organic load (Albumin) Test strains: *A. brasiliensis* (formally known as *A. niger*) and *C. albicans*

Result	4.0 %	3.0 g/l Albumin	15 min.
Certificates:	Eurofins-Biolab Spa, Vimodrone / Italy, 23 April 2007, 30 July 2007		

EN 1656

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

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

Results	10°C	2.0 %	clean conditions	30 min.
	10°C	3.0 %	dirty conditions	30 min.

Certificates: Lonza Basel, laboratory OPC-E, 3 September 2007

EN 1657

Fungicidal result (log 4), in presence of high organic load (Albumin) Test strains: *A. niger* and *C. albicans*

Result	10°C	2.0 %	3.0 g/l Albumin	30 min.

Certificate: Lonza Basel, Laboratory OPC-E, 3 September 2007

EN 14561

Bactericidal result (log 5), in presence of low organic load (Albumin) Test strains: *P. aeruginosa, S. aureus* and *E. hirae*

Result	2.5 %	0.3 g/l Albumin	15 min.

Certificate (GLP): Eurofins, 23 September 2011

EN 14562

Yeasticidal result (log 4), in presence of low organic load (Albumin) Test strain: *C. albicans*

Result	3.0 %	0.3 g/l Albumin	15 min.

Certificate (GLP): Eurofins, 23 September 2011

EN 13727

Bactericidal result (log 5), in presence of high organic load (Albumin + sheep erythrocytes)

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

Result	2.0 %	3.0 g/l (Albumin + sheep erythrocytes)	5 min.

Certificate (GLP): Eurofins, 17 June 2011

EN 13624

Fungicidal result (log 4), in presence of low organic load (Albumin) Test strains: *C. albicans* and *A. niger*

Result:	3.0 %	0.3 g/l (Albumin)	15 min.

Certificate (GLP): Eurofins, 17 June 2011

Test According to VAH

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

Results low organic load	2.0 %	15 and 30 min.
	1.0 %	60 min.
	0.5 %	240 min.
Results increased organic load	2.0 %	15, 30 and 60 min.
	1.0 %	240 min.

Certificates:

Prof. Dr. R. Schubert, Frankfurt (M), 29 December 2002

Prof. Dr. H.-P. Werner, Schwerin, 4 October 2002

Tested According to DVG (German Veterinary Medical Society) Food Sector, 8th List

Disinfectants for handling / processing area: Meat production and food of animal origin (except milk) and canteen kitchens.

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

General DVG recommendation: For effective disinfection, the use of 0.4 litre use solution per m2 surface is normally necessary.

Deployed application concentrations are specified in volume percentage (V-%) for 5 and 30 minutes (Fungicide part C: 15 and 30 minutes)

Low contaminated area (basic organic load)

List Part	Temp / °C	Bacteria		Yeast (Levurocide)		Yeast and Moulds (Fungicide)		Virus	
–	4	5a	5b	6a	6b	7a	7b	8a	8b
–	–	5´	30´	5´	30´	5´	30´	5´	30´
A	10	2	1	2	1	5	4	–	–
A	20	2	1	3	1,5	5	4	–	–
B	10	–	–	–	–	–	–	–	–
B	20	–	–	–	–	–	–	–	–
–	–	–	–	–	–	15´	–	–	–
C	20	2	1	3	1	4	4	–	–

Contaminated area (high organic load)

List Part	Temp / °C	Bacteria		Yeast (Levurocide)		Yeast and Moulds (Fungicide)		Virus	
–	4	9a	9b	10a	10b	11a	11b	12a	12b
–	–	5´	30´	5´	30´	5´	30´	5´	30´
A	10	4	2,5	3,5	1,5	10	7	–	–
A	20	4	2	5	2	10	7	–	–

A Meat production and food of animal origin (except milk)

B Milk area

C Canteen kitchens

DVG committee disinfection decided that the formulation DXT55 & DXT55 can be DVG listed (8th list, meat production and food of animal origin (except milk) and canteen kitchens).

Prof. Rösler (DVG, chairman of the committee disinfection), Berlin

Certificates: Prof. Dr. U. Rösler (chairman of the committee disinfection), Berlin, 9 December 2014

Laboklin, Dr. B. Hunsinger, Bad Kissingen, 16 June 2014

Virucidal Performance

Tested According to BGA (now RKI) and DVV

Equivalence expertise based on formulation regarding virus inactivating properties of DXT55

Polio virus

Results according to BGA (now RKI) and DVV

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

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

ECBO Virus

Results according to BGA (now RKI) and DVV

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

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

Adeno Virus

Result according to BGA (now RKI) and DVV

With soil load	4.0 %	30 min.

Certificate: Dr. J. Steinmann, Bremen, 24 May 2005

Noro (Norwalk) Virus

Result according to BGA (now RKI) and DVV Test strains: *Feline calici virus (FCV)*

With soil load	4.0 %	30 min.

Certificate: Dr. J. Steinmann, Bremen, 25 May 2005

Rota Virus

Result according to BGA (now RKI) and DVV

Without soil load	3.0 %	15 min.

Certificate: Dr. J. Steinmann, Bremen, 8 June 2005

Vaccinia Virus

Result according to BGA (now RKI) and DVV

With soil load	2.0 %	5 min.

Certificate: Dr. J. Steinmann, Bremen, 30 July 2005

Polyoma Virus SV 40 (formerly Papova virus)

Result according to BGA (now RKI) and DVV

With soil load	2.0 %	30 min.

Certificate: Dr. J. Steinmann, Bremen, 9 March 2006

Summary of Dr. J. Steinmann, MikroLab Bremen

The surface disinfectant fulfils the requirement “virucidal” defined by a working group “Viruzidie” of the Robert Koch-Institute (RKI), the expert group of DVV (German Association for the Control of Virus Diseases) “virus disinfection” and the disinfectant commission of DGHM (now VAH). Following this recommendation, a disinfectant can be declared “virucidal”, if it is able to inactivate the following four test viruses (Polio-, Adeno-, Vaccinia- and Polyoma virus (SV40) in a quantitative suspension test under defined conditions.

Therefore, after successful experiments with the four viruses the surface disinfectant DXT55 is also effective against all non-enveloped and enveloped human viruses including families such as Orthomyxoviridae and all human and animal Influenza viruses.

Thus, the following concentrations and exposure times are necessary for inactivation of the above mentioned four test viruses:

4.0 %	60 min.
5.0 %	15 min.

Certificate: Dr. J. Steinmann, Bremen, 8 May 2009

Tested According to EN 14476

Polio Virus

Results according to EN 14476:2007-2

Clean conditions	4.0 %	30 min.
Dirty conditions	6.0 %	120 min.

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

Adeno Virus

Result according to EN 14476:2007-2

Clean conditions	2.0 %	60 min.
	4.0 %	30 min.
Dirty conditions	2.0 %	60 min.
	4.0 %	30 min.

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

Noro virus (murine Norovirus as surrogate for human Norovirus)

Result according to EN 14476:2013

Clean conditions	2.0 %	5 min.
Dirty conditions	2.0 %	15 min.

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

After evaluation with Polio virus, Adeno virus and MNV (murine Norovirus) the surface disinfectant DXT55 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 DXT55 is also effective against enveloped viruses including HBV, HCV and HIV (blood-borne viruses), all members of the Coronaviridae family including MERS-CoV, the Filoviridae family including Ebola virus and the Paramyxoviridae family including Measles virus.

Clean conditions	4.0 %	30 min.
Dirty conditions	6.0 %	120 min.

Statements: Dr. J. Steinmann, Bremen, 8 March 2015

Influenza A (H1N1) Virus

Results according to EN 14476:2005

Dirty conditions	0.5 %	15 min.

Certificate: Lonza Microbial Control Laboratory, Allendale (USA), 18 September 2009

Influenza A (H7N9) virus

Results according to EN 14476:2005+A1:2006

Dirty conditions:	0.5%	5 min.

Certificate: Microbac Laboratory, Sterling VA20164 (USA), 13 September 2013

Avian Influenza Virus (H3N8 / H5N1)

(Expertise based on formulation DXT55)

Result according to EN 14476:2005 Influenza virus A/duck/Ukraine/ 1/63 (H3N8) was incorporated as surrogate of Avian influenza virus (H5N1) due to bio safety reasons.

Clean conditions	0.5 %	10 min.
	1.0 %	5 min.
Dirty conditions	0.5 %	30 min.
	1.0 %	10 min.

Certificate: Dr. J. Steinmann, MikroLab Bremen, 13 February 2006

Bovine Corona Virus (BCoV)

(as surrogate for other members of Coronavirus family including MERS-CoV)

Results according to EN 14476:2013

Clean conditions	1.0%	1 min.

Certificate: Dr. J. Steinmann, MikroLab Bremen, 25 May 2014

Virucidal Performance Against Bacteriophages

Tested According to EN 13610:2002

Virucidal activity against bacteriophages according to EN 13610:2002 in presence organic load (1 % skimmed milk)

Results:

Lactococcus lactis subsp. lactis phage P001:	3.0 %	15 min.
Lactococcus lactis subsp. lactis phage P008:	3.0 %	15 min.

Certificate: Dr. Brill + Partner GmbH, Hamburg, 25 February 2014

Sporicidal Performance

EN 13704 *(Clostridium difficile)*
Sporicidal activity according to EN 13704 against *C. difficile* in presence of low organic load / without organic load

Results (log 4)	5.0 %	0.3 g/l Albumin	60 min.
	5.0 %	without Albumin	60 min.

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

EN 13704:2002 *(Bacillus subtilis)*
Sporicidal activity according to EN 13704 against *B. subtilis* in presence of low organic load (Albumin)

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

Certificate: L+S, Bad Bocklet, 23 April 2012

Product Information

Material Compatibility

Suitable for hard washable surfaces. As surfaces vary in quality the product suitability should be checked by testing first on a small inconspicuous area. Aluminium, linoleum, acrylic glass or surfaces coated with polymers could be affected depending on the use concentration. Plasticized PVC could be discoloured.

Compatibility Testing

Samples of typical materials used for medical devices which were test-ed for material compatibility:

— Anodixed 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 — 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.

Conclusions:

DXT55 is suitable for the disinfection of hard surfaces in hospitals, institutional applications and the food industry. DXT55 is compatible with ceramics, PVC and polyethylene.

Items containing high concentrations of plasticizers lost some of their properties and may be affected in their properties.

The disinfection of the following items is not advised: Linoleum, flexible PVC-tubes, polymer coated surfaces and high-quality butyl rubber.

The corrosive potential of DXT55 against anodized aluminium, tungsten carbide-nickel compounds limits its use for the dis-infection of medical devices.

Certificate: Dr. Brill + Partner GmbH, Hamburg, 20 January 2011

Physical Properties

Appearance	clear liquid
Odour	slightly saponaceous
Density at 20°C	1.06 g/cm$_3$
pH of concentrate	approx. 12.9
pH of 1 % aqueous solution	approx. 11.2
Surface tension, 1 % aqueous solution	29 mN/m
Viscosity at 23°C	30 mPa·s (spindle 1, 10 rpm, Brookfield)
Stability of concentrate	3 years

Perfumes and Dyes

It is possible to add a perfume and / or a dye to the formulation.

Safety

See MSDS

First Aid

If in Eyes
— Hold eyes open and rinse slowly and gently with water for 15–20 minutes.
— Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes.

If on Skin or Clothing
— Take off contaminated clothing.
— Rinse skin immediately with plenty of water for 15–20 minutes.

If Swallowed
— Call a poison control centre or doctor immediately for treatment ad-vice. Have person sip a glass of water if able to swallow.
— Do not induce vomiting unless told to do so by the poison control centre or doctor.
— Do not give anything by mouth to an unconscious person.

If Inhaled
— Move person to fresh air.
— If person is not breathing, call the emergency service or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.

Disposal
Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of the national laws.

Container Disposal
Non-refillable container. Do not reuse or refill this container.
Clean container promptly after emptying.

Recommendation for Classification and Labelling

See MSDS

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.

Storage
Store in original container in areas inaccessible to children.
Open dumping is prohibited.