

Uddevalla, March 24, 2020

LifeClean - Coronavirus

LifeClean's recommendation is

As of today, EN 14476 is still the highest Viricidal standard.

"LifeClean is effective against the viruses listed in EN 14476 including *Adenovirus, Poliovirus and Murine norovirus* which are non-enveloped viruses, these are much more difficult to eliminate than enveloped viruses. Coronavirus falls in the virus family Coronaviridae, in the order of Nidovirales and is a enveloped virus. See excerpts in the virus list (which includes Coronavirus) according to EN 14476 below and appendix "Annex B in EN 14476..." "

Test result EN 14476:2013

The requirement to pass the test is at least 4 logs, we succeeded with 5-6 logs within 1 min.

Test norm	Test type	Organism	Log reduction required	Log reduction achieved	Laboratory	Clean or dirty	Contact time	LC Std
EN 14476:2013 (Phase 2, Step 1)	Quantitative suspension test	Poliovirus Type 1, LSc-2aba	4 log ₁₀	>5 log ₁₀	Dr. Brill + Partner GMBH Laboratory, Germany	Clean	1 min	200
		Adenovirus Type 5, strain Adenoid 75, ATCC VR-5		>6 log ₁₀				200
		Murine Norovirus Strain S99		>5 log ₁₀				200

LifeClean is a research-based company where evidence and reliable reports are of paramount importance to us. We have therefore done a screening test at an independent laboratory; MSL Microbiological Solutions Ltd.

Below screening test makes us convinced that we have full effect against Coronavirus.

MSL's test on "Feline coronavirus" is closely related as Corona COVID -19. LifeClean passed the test within 1 minute with:>4.25 log₁₀.

Test result EN 14476:2013+A2:2019

Test norm	Test type	Organism	Log reduction required	Log reduction achieved	Laboratory	Clean or dirty	Contact time	LC Std
EN 14476:2013+ A2:2019 (Phase 2 Step1)	Quantitative suspension test, Screening	Feline coronavirus, Strain Munich	4 log ₁₀	>4.25 log ₁₀	MSL, Microbiological Solutions Ltd, United Kingdom	Clean	1 min	200

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Excerpt from test report EN 14476:2013+A2:2019



Test identification Reference: J001375

Reduced Screening test based on - BS EN 14476:2013+A2:2019

Test Result Summary

The test product shown a log reduction of 4.25 when tested under the conditions stipulated in this report with a contact time of 1 minute.

The test product shown a log reduction of 4.33 when tested under the conditions stipulated in this report with a contact time of 2 minutes.

The members of the family Coronaviridae are enveloped and have a positive sense RNA genome. Coronaviruses have a distinct morphology with an outer 'corona' of embedded envelope spikes. These viruses cause a broad spectrum of animal and human disease.

We would like to share with you our latest **Coronavirus** test at DR. BRILL + PARTNER GMBH Laboratory in Germany. LifeCleans Disinfectant (50 PPM) was tested under clean condition with the test organism of *bovine coronavirus (BCoV)* based on EN 14476:2015. The test results showed that *bovine coronavirus (BCoV)* was sufficiently inactivated (≥ 5.63 log reduction) in only 1 minute. According to this virucidal efficacy test, LifeClean Disinfectant is considered as a sufficient disinfectant for **Coronavirus** when used in accordance with LifeClean instruction manual.

Utdrag från testrapport L20-0125BC-2 BCoV Screening EN 14476



Test #6427 in 03/2020
Result no.: L20/0125BC.2, Version 01
Date: 12/03/2020
Client: Lifeclean International AB
Confirmation no.: (211825)

Table 1: Screening of LifeClean Disinfectant against bovine coronavirus (BCoV) based on EN 14476

Product	Conc. (ClO ₂)	Soil load	Cytotoxicity log ₁₀ CD ₅₀ /ml	Titre virus control (log ₁₀ TCID ₅₀ /ml)	Virus titre (log ₁₀ TCID ₅₀ /ml) after				Reduction factor after			
					0,5 min	1 min	2 min	5 min	0,5 min	1 min	2 min	5 min
LifeClean Disinfectant	200 ppm	clean	1,50	7,13	n.d.	≤ 1,50	≤ 1,50	n.d.	n.d.	≥ 5,63	≥ 5,63	n.d.
LifeClean Disinfectant	50 ppm	clean	1,50	7,13	n.d.	≤ 1,50	≤ 1,50	n.d.	n.d.	≥ 5,63	≥ 5,63	n.d.

n.d = not done n.a. = not applicable

Comment: A disinfectant is having virus-inactivating efficacy if a reduction factor of at least $\geq 4 \log_{10}$ (inactivation of $\geq 99.99\%$) can be demonstrated.

clean: 0.3 g/l BSA; dirty: 3.0 g/l BSA + 3.0 ml/l erythrocytes

Important notice

Contact time is the time required for a disinfectant to disinfect and **drying time** is the time within a wetted surface dries. A disinfectant is absolutely useless if the contact time is longer than the drying time. Lifeclean requiring only a 1 minute contact time to kill viruses including corona will be effective without the need to rewet the surface.

We recommend that you follow proper cleaning and disinfection procedures with LifeClean (see user instructions) and WHO guidelines for Corona outbreaks. For user instructions and safety data sheet see www.lifeclean.se

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**From Annex B in EN 14476:
Examples of viruses which may contaminate human medical instruments,
hands, surfaces (*Enveloped viruses are in bold*)**

NOTE This list is not exhaustive.

Blood

Enterovirus	Hepatitis C virus (HCV)
Filoviridae	Hepatitis Delta virus (HDV)
Flavivirus	Human Immunodeficiency Virus (HIV)
Herpesviridae	Human T Cell Leukemia Virus (HTLV)
Hepatitis A Virus (HAV)	Parvovirus B 19
Hepatitis B virus (HBV)	

Respiratory tract

Adenovirus (Mast-)	Influenza Virus
Coronavirus	Paramyxoviridae
Enterovirus	Rhinovirus
Herpesviridae	Rubella Virus

Neural tissue, ear & nose, eye

Adenovirus (Mast-)	Human Immunodeficiency Virus (HIV)
Enterovirus	Polyomavirus
Herpesviridae	Rabies Virus
Measles Virus	Rubella Virus

Gastro-intestinal

Adenovirus(Mast-)	Enterovirus
Caliciviridae	Hepatitis A Virus (HAV)
Coronavirus	Hepatitis E Virus (HEV)
Astrovirus	Rotavirus

Skin, breast and/or milk

Enterovirus	Human T Cell Leukemia Virus (HTLV)
Herpesviridae	Papillomavirus
Human Immunodeficiency Virus (HIV)	Poxviridae

Spleen and lymph nodes (see also „Blood“)

Human T Cell Leukemia Virus (HTLV)
Human Immunodeficiency Virus (HIV)

Dental procedure

Adenovirus(Mast-)	Hepatitis C Virus (HCV)
Enterovirus	Hepatitis Delta Virus (HDV)
Herpesviridae	Human Immunodeficiency Virus (HIV)
Hepatitis B virus (HBV)	

Urogenital tract

Hepatitis B Virus (HBV)	Human T Cell Leukemia Virus (HTLV)
Herpesviridae	Papillomavirus
Human Immunodeficiency Virus (HIV)	Polyomavirus