

TITANIUM™

Sterile Chlorine Dioxide Spray

Viruses

Microbiological Efficacy Summary

Test norm	Test type	Organism	Log reduction required	Log reduction achieved	Laboratory	Clean or dirty	Contact time
EN 14675	Suspension	Bovine enterovirus	> 4 log	4.13 log	Eurofins	Dirty 1	30/60 sec.
		Canine parvovirus	> 4 log	4.00/4.25 log	Eurofins	Dirty 1	
		Feline calicivirus	> 4 log	>4.38/5.25 log	Eurofins	Dirty 1	
EN 14476	Suspension	Herpesvirus	> 4 log	> 4.38/5.38 log	Dr. Brill & Dr. Steinmann	Clean 1	30/60 sec.
		Poliovirus	> 4 log	>6.38 log	Dr. Brill & Dr. Steinmann	Clean 1	30 sec.
		Adenovirus	> 4 log	>6.00 log	Dr. Brill & Dr. Steinmann	Clean 1	

Mycobacteria

EN 14348	Suspension	<i>Mycobacterium terrae</i>	> 4 log	>6.30 log	MGS	Clean 1	60 sec.
EN 14204	Suspension	<i>Mycobacterium avium</i>	> 4 log	> 5.51 log	MGS	Clean 1	30 sec.

Spores

EN 13704	Suspension	<i>Clostridium difficile</i>	> 3 log	3.81 log	MGS	Clean 1	60 sec.
EN 13704	Suspension	<i>Bacillus subtilis</i>	> 3 log	>3.10 log	MGS	Clean 1	60 sec.
		<i>Bacillus pumilis</i>	N/A	>3.48 log	MGS	Clean 1	
Surface wiping test	Surface	<i>Bacillus subtilis</i>	> 2 log	>1.8/>3 log	MGS	Clean 1	60/120 sec.

Fungi

EN 1650	Suspension	<i>Candida albicans</i>	> 4 log	> 4.21 log	MGS	Clean 1	60 sec.
		<i>Aspergillus brasiliensis</i>		> 4.23 log	MGS	Clean 1	
EN 1657	Suspension	<i>Candida albicans</i>	> 4 log	> 4.42 log	MGS	Clean 1	30 sec.
EN 13697	Surface	<i>Candida albicans</i>	> 3 log	> 3.9 log	MGS	Clean 1	60 sec.

Bacteria

Test norm	Test type	Organism	Log reduction required	Log reduction achieved	Laboratory	Clean or dirty	Contact time
EN 1276	Suspension	<i>Pseudomonas aeruginosa</i>	> 5 log	> 5.31 log	MGS	Clean 1	60 sec.
		<i>Escherichia coli</i>		> 5.33 log	MGS	Clean 1	
		<i>Staphylococcus aureus</i>		> 5.39 log	MGS	Clean 1	
		<i>Enterococcus hirae</i>		> 5.33 log	MGS	Clean 1	
		<i>Staphylococcus hominis</i>		> 5.4 log	ALS	Clean 1	
		<i>Dermabacter hominis</i>		> 5.3 log	ALS	Clean 1	
		<i>Staphylococcus capitis</i>		> 5.3 log	ALS	Clean 1	
		<i>Propionibacterium acnes</i>		> 5.5 log	ALS	Clean 1	
		<i>Micrococcus luteus</i>		> 5.3 log	ALS	Clean 1	
		<i>Staphylococcus epidermis</i>		> 5.3 log	ALS	Clean 1	
EN 1656	Suspension	<i>Pseudomonas aeruginosa</i>	> 5 log	> 5.13 log	MGS	Dirty 1	30 sec.
		<i>Staphylococcus aureus</i>		> 5.16 log	MGS	Dirty 1	
		<i>Enterococcus hirae</i>		> 5.22 log	MGS	Dirty 1	
		<i>Proteus vulgaris</i>		> 5.27 log	MGS	Dirty 1	
EN 13697	Suspension	<i>Pseudomonas aeruginosa</i>	> 4 log	4.8 log	MGS	Clean 1	60 sec.
		<i>Escherichia coli</i>		> 5.3 log	MGS	Clean 1	
		<i>Staphylococcus aureus</i>		4.3 log	MGS	Clean 1	
		<i>Enterococcus hirae</i>		4.1 log	MGS	Clean 1	
		<i>Klebsiella pneumonia</i>		> 4.2 log	MGS	Clean 1	
EN 13727	Suspension	Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)	> 5 log	> 5.33 log	MGS	Clean 1	60 sec.
		Multidrug-resistant <i>Acinetobacter baumannii</i> (MDRA)		> 5.97 log	MGS	Clean 1	
		Vancomycin-resistant <i>Enterococcus faecium</i> (VRE)		> 5.07 log	MGS	Clean 1	
		Carbapenem-resistant <i>Klebsiella pneumonia</i> (CRE)		> 6.32 log	MGS	Clean 1	

Clean/Dirty Conditions Key

Clean 1: 0.3 g/L bovine albumin

Dirty 1: 3 g/L bovine albumin