

# Summary of Antimicrobial Efficacy

The following results were obtained using Stable Chlorine Dioxide Solution % 2. These results should not be extrapolated for other chlorine dioxide based products that may take much higher concentrations to achieve similar biocidal activities.

## Bacteria

Effective May 2009

TEST ORGANISM	CONTACT TIME	CONCENTRATION	RESULT
Alicyclobacillus acidoterrestris	10 min	30 ppm	99.998% kill
Bacillus cereus spores	5 min	200 ppm	99.999% kill
Campylobacter jejuni	30 sec	30 ppm	99.9% kill
Erwinia carotovora	60 sec	50 ppm	99.999% kill
Escherichia coli O157:H7	60 sec	3 ppm	99.999 % kill
Lactobacillus sp.	60 sec	20 ppm	99.999% kill
Legionella pneumophila	60 sec	25 ppm	99.999% kill
Listeria monocytogenes	60 sec	25 ppm	99.9999% kill
Mycobacterium bovis (tuberculosis)	10 min	500 ppm	99.9999% kill
Methicillin Resistant Staphylococcus aureus (MRSA)	10 min	500 ppm	100% kill
Pediococcus sp.	60 sec	20 ppm	99.999% kill
Proteus mirabilis	60 sec	100 ppm	99.999999% kill
Pseudomonas aeruginosa	60 sec	5 ppm	99.9999% kill
Salmonella typhimurium	60 sec	100 ppm	99.999% kill
Staphylococcus aureus	60 sec	30 ppm	99.999% kill
Streptococcus faecalis	60 sec	100 ppm	99.99999% kill
Streptococcus faecium	60 sec	100 ppm	99.9999% kill
Vancomycin Resistant Enterococcus faecalis (VRE)	10 min	500 ppm	100% kill

## Fungi

TEST ORGANISM	CONTACT TIME	CONCENTRATION	RESULT
Aspergillus fumigatus spores	60 sec	100 ppm	99.9999% kill
Aspergillus niger	60 sec	100 ppm	99.9999% kill
Candida albicans	60 sec	100 ppm	99.99999% kill
Cladosporium	30 sec	500 ppm	99.999% kill
Mucor sp	30 sec	500 ppm	99.999% kill
Penicillium	60 sec	100 ppm	99.999% kill
Penicillium roquefortii	60 sec	500 ppm	100% kill
Saccharomyces cerevisiae	60 sec	30 ppm	99.999% kill
Stachybotrys chartarum	60 sec	100 ppm	99.997% Kill
Trichophyton mentagrophytes	5 min	500 ppm	100% kill

## Viruses

TEST ORGANISM	CONTACT TIME	CONCENTRATION	RESULT
African Swine Fever Virus	5 min	500 ppm	100% virucidal
Avian Influenza A virus	10 min	500 ppm	100% virucidal
Canine Parvovirus	10 min	500 ppm	100% virucidal
Coxsackie Virus	5 min	550 ppm	99.9% kill
Foot & Mouth Disease Virus	5 min	500 ppm	100% virucidal
Hepatitis C	10 min	500 ppm	100% virucidal
Herpes Simplex Virus Type 1	5 min	550 ppm	99.9% kill
Newcastle Disease virus	10 min	500 ppm	100% kill
HIV Virus Type 1 (HIV 1)	10 min	500 ppm	100% virucidal
Polio Virus Type 2	5 min	550 ppm	99.9% kill
PRRS virus	60 sec	312 ppm	100% virucidal
Pseudorabies virus	10 min	500 ppm	100% virucidal
Rhino Virus	5 min	550 ppm	99.9% kill
Swine Vesicular Disease Virus	5 min	500 ppm	100% virucidal