STABILIZED AQUEOUS OZONE PATHOGEN SUMMARY

TESTING SPONSORED BY TERSANO, INC.

Revised April 21, 2017

MICRO-ORGANISM	GROUP	STANDARD	REDUCTION	TIME
Claim: For use as a food-contact sanitizer on hard, non-porous surfaces. Testing conducted at MycoScience Labs, Wilmington, CT 2/25/16				
Escherichia coli (E.coli) ATCC 11 229	Bacteria	AOAC 960.09	> 99.999%	30 secs
Staphylococcus aureus (Staph) ATCC 6 538	Bacteria	AOAC 960.09	> 99.999%	30 secs
Claim: For use as a non-food-contact sanitizer on hard, non-porous surfaces. Testing conducted at MycoScience Labs, Wilmington, CT 4/13/17				
Listeria monocytogenes ATCC 19 115	Bacteria	AOAC 960.09	> 99.999%	30 secs & 5 minutes
Claim: For use as a non-food-contact sanitizer on hard, non-porous surfaces. Testing conducted at Lapuck Labs, Canton, MA 3/17/16 and 2/26/16.				
Escherichia coli (E.coli) ATCC 11 229	Bacteria	ASTM E1153	> 99.9%	30 secs
Salmonella typhimurium (Salmonella) ATCC 1 428	Bacteria	ASTM E1153	> 99.9%	30 secs
Claim: For use as a non-food-contact sanitizer on hard, non-porous surfaces. Testing conducted at Lapuck Labs, Canton, MA 4/4/17.				
Enterococcus hirae ATCC 10 541	Bacteria	BS EN 13697:2015	> 99.99%	5 minutes
Escherichia coli (E. coli) ATCC 10 536	Bacteria	BS EN 13697:2015	> 99.99%	5 minutes
Pseudomonas aeruginosa ATCC 15 442	Bacteria	BS EN 13697:2015	> 99.99%	5 minutes
Staphylococcus aureus (Staph) ATCC 6 538	Bacteria	BS EN 13697:2015	> 99.99%	5 minutes
Candida albicans ATCC 10 231	Yeast	BS EN 13697:2015	> 99.9%	30 minutes
Aspergillus niger (A. niger) ATCC 16 404	Mould	BS EN 13697:2015	> 99.9%	30 minutes

* All standard protocols are modified. BS EN 13697:2015 standards were done under clean condition protocol.

For more detailed kill rate data, please contact your Tersano Customer Representative.

Tested to meet or exceed TUV, UL and CSA standards. Tersano's aqueous ozone is created by a dispenser regulated as a pesticidal device manufactured at EPA Establishment No. 089093-CAN-001.

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The chart below summarizes the power of aqueous ozone and time required to destroy various bacteria and viruses at a strength of 2 ppm or less.

TESTING SPONSORED BY 3RD PARTY ORGANIZATIONS

Results of Aqueous Ozone Tested For Use As a Sanitizer on Non-Porous Surfaces

MICROBE	REDUCTION	TIME	REPORTING ORGANIZATION
Bacteriophage F2	99.9999%	Instantaneously	Journal of Food Sciences
E. faecalis	99.9%	Instantaneously	American Society for Microbiology
Mycobacterium avium	99.9%	Instantaneously	Virginia Tech
Hepatitus A	99%	Instantaneously	Journal of Food Sciences
Rotovirus (HRV)	99.9%	6 seconds	Applied and Environmental Microbiology
Tricophyton Mentagrophytes	99.9999%	30 seconds	Water Quality Products, Inc
Enteric Adenovirus	99.9%	30 seconds	Elsevier Water Research
Feline callicivirus	99.9%	30 seconds	Elsevier Water Research
Norwalk virus	99.9%	30 seconds	Applied and Environmental Microbiology
Pseudomonas Aeruginosa	99.9999%	5 minutes	Water Quality Products, Inc
Cryptosporidium parvum	99%	5 minutes	Applied and Environmental Microbiology
Polio 1	99.99%	10 minutes	National Academies Press

Aqueous Ozone is approved by the EPA, FDA, USDA, is considered GRAS, and is compliant with the EPA Organic Program as a natural and effective cleaner and sanitizer.

- Nonfood Compounds Program listed on White List as a no-rinse sanitizer and cleaner
- Aqueous ozone approved as antimicrobial agent June 26, 2001
- Awarded Maximum 10 Points
- Non-objection letter received
- Meets standards GS-37 and GS-53
- Recognized as environmentally preferable
- GRAS and compliant with the EPA Organic Program
- USDA/National Organic Program (NOP) Ozone Approval

Data compiled from third party independent industry and academic sources, and is for general information purpose only. Kill rates vary with temperature, surface texture, pH and other factors.

For more detailed kill rate data along with a more thorough and complete list of microbes, please contact your Tersano Customer Representative.

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