

April 23, 2013

Summary Report – Gelda Labs on EcoTex Ozone System

Determine the effectiveness of EcoTex ozone disinfection system in wash cycles using microbial markers

Introduction:

Tests were conducted to study the effectiveness of the EcoTex system which utilizes ozone in the wash cycle. Each cycle is challenged with a list of microorganisms that are introduced into the wash cycle in compatible materials. The EcoTex system allows the laundry to be processed at lower temperatures thus resulting in benefits to both utility and textile life.

Apparatus:

IPSO washer-extractor equipped with EcoTex ozone system. Standard microbiological testing supplies and equipment.

Test organisms:

- Yeast Candida albicans
- Mold Aspergillus niger
- S. aureus
- S. aureus MRSA
- E.coli
- C.difficile
- Mycobacteria
- Salmonella
- Psedomonas aeruginosa
- Streptococcus faecalis
- VRE Vancomycin Resistant Enterococcus

Conclusion:

After performing two conventional cycle tests in an IPSO washer-extractor - (conventional cycle: Towel Cycle & New Linen Cycle - no ozone - hot water (150F)), it was concluded that 99.99% of all test organisms stated above were killed.

When ozone was introduced into the wash system cycle with the IPSO washer-extractor - cold water (75F), it was concluded that 99.99% of all test organisms stated above were killed.

The following pages show a detailed laboratory analysis report along with images of each organism test group and the results after a conventional cycle and after an ozone cycle. All tests conclude that 99.99% of the above test organisms were killed.

Group A: Yeast and Mold - 99.99% bug kill

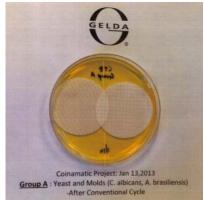
Conclusions: The conventional and ozone cycles were both equally effective in killing the test organisms in micro fiber mops.

		GELD Tel: (905) 673-		5) 673-8114 E-ma			ISO 17025: Food & Web MOE: Web Lic.#100410- Pharmaceutica & Neutraceutica
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Company	Coinan 301 Math	natic eson Blvd. W. Mississauga,	Ont.L5R 3G3	Tel Fax	905-755-1 905-755-8 wzoburi@s		
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Date Submitted	Jan 14,2	2013		Date reported	Feb 11,13		
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	Micro Fib						
	Determine th markers	e effectiveness of Envirom	atic ozone disin	flection system in w	ash cycles us	ing microbial	
Protocol	GSCOIN-01 da	ated Sep 11,2012					
Concentration of	ETect		1 0	brasiliensis (A		.,,	
Concentration of Organism inocul into each cycle u X 4 micro fiber	ilated using 4 r material	Recovery from the micro fiber test material	% Recover (Not Less 7 75%)	Then (% kill	ry after the tional cycle)	Recovery after Ozone Cycle (%Kill)	
Organism inocul into each cycle u X 4 micro fiber C. albicans: 6.6 X	ilated using 4 r material (10^9	Recovery from the micro fiber test material 5.8 X10°9	% Recover (Not Less 7 75%) 87%	ry Recover convent (% kill 6 <10 (>	ery after the tional cycle) 99.99%)	Recovery after Ozone Cycle (%Kill) 30 (>99.99%)	
Organism inocul into each cycle u X 4 micro fiber C. albicans: 6.6 X A.brasiliensis: 0.2	ilated using 4 r material (10°9 24 X10°9	Recovery from the micro fiber test material	% Recover (Not Less 7 75%)	ry Recover convent (% kill 6 <10 (>	ry after the tional cycle)	Recovery after Ozone Cycle (%Kill)	
Organism inocul into each eyele u X 4 micro fiber C. albicans: 6.6 X A.brasiliensis: 0.2 System control	ilated using 4 r material (10°9 24 X10°9	Recovery from the micro fiber test material 5.8 X10*9 0.20 X10*9	% Recover (Not Less 7 75%) 87% 83.35	ry Then Recover (% kill 6 <10 (> % <10 (>	ery after the tional cycle) 99.99%) 99.99%)	Recovery after Ozone Cycle (%Kill) 30 (>99.99%) <10 (>99.99%)	-
Organism inocul into each cycle u X 4 micro fiber C. albicans: 6.6 X A.brasiliensis: 0.2 System control SDA	ilated using 4 r material (10^9 24 X10^9 ls	Recovery from the micro fiber test material 5.8 X10'9 0.20 X10'9 No Growth	% Recover (Not Less 7 75%) 87% 83.39	ry Then Recover conven (% kill 6 <10 (> % <10 (> Positive Control	ry after the tional cycle) 99.99%) 9.99%)	Recovery after Ozone Cycle (%Kill) 30 (>99.99%) <10 (>99.99%) Pass	
Organism inocul into each cycle u X 4 micro fiber C. albicans: 6.6 X A.brasiliensis: 0.2 System control SDA Mops after disin <u>Conclusions:</u> The convention	lated using 4 r material (10^9 24 X10'9 Is infection cyanal and oze	Recovery from the micro fiber test material 5.8 X10'9 0.20 X10'9 No Growth	% Recover (Not Less 1 75%) 87% 83.3% 1 qually effecti	ry Recover Then Recover (% kill 6 <10 (> % <10 (> Positive Control No Growth ive in killing the	ry after the tional cycle) 99.99%) 99.99%) is I test organi	Recovery after Ozone Cycle (%Kill) 30 (>99.99%) <10 (>99.99%) <10 (>99.99%) Pass	ps.
Organism inocul into each cycle u X 4 micro fiber C. albicans: 6.6 X A.brasiliensis: 0.2 System control SDA Mops after disin <u>Conclusions:</u> The convention	alated using 4 r material (10^9 24 X10/9 Is infection cy- nal and ozz 1: 1: Positiv	Recovery from the micro fiber test material 5.8 × 10°9 0.20 × 10°9 No Growth cle one cycles were both e e Controls; 2: After cor	% Recover (Not Less 7 75%) 87% 83.35 1 2 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	ry Recover Then Recover (% kill 6 <10 (> % <10 (> Positive Control No Growth ive in killing the	ry after the tional cycle) 99,99%) is I test organis ne Cycle.	Recovery after Ozone Cycle (%Kill) 30 (>99.99%) <10 (>99.99%) <10 (>99.99%) Pass	ps.

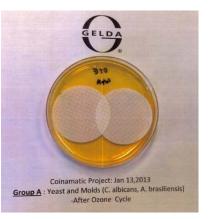
Postitive Controls



After Conventional Cycle



After Ozone Cycle

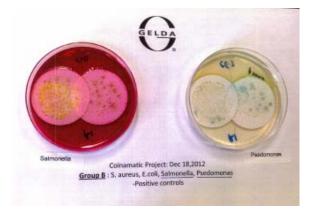


Group B: S. aureus, E.coli, Salmonella, Pseudomonas - 99.99% bug kill

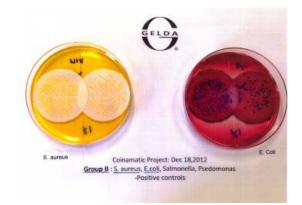
Conclusions: The conventional and ozone cycles were both equally effective in killing the test organisms in micro fiber mops.

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	Date Submittee	Dec 18,	2012		Dat	e reported	Jan 7,20	13	
	Product	Micro Fib		Ma anna di	1				
	Test	markere	e effectiveness of Enviroma	oc ozone de	amection	system in w	ish cycles (using microbial	
	Protocol	OSCOIN-01 d	ated Sep 11,2012						
	Concentration of Organism inocu into each cycle X 4 micro fibe	ulated using 4	Recovery of E.coli from the micro fiber test material	% Recov (Not Les 75%)		after the	ional eye	after Ozone Cycle	
	S. aureus: 22.0 X		S. aureus: 19.6 X10'9	89	1%		99.99%)	650 (>99.99%)	
	E. coli: 18.0 X10		E. coli: 15.7 X10°9	-87	%		99.99%)	<10 (>99.99%)	
	Salmonella:2.5 3		Salmonella:2.4X10^9		M	<10 (>99.99%)		<10 (>99.99%)	
	Psedomonas:2.1		Psedomonas:.1.9X10/9	90	1%	<10 (>	99.99%)	<10 (>99.99%)	
	System control								
	DCA, Cetrimid				Positive Controls			Pass	
	Mops after disinfection cycle No Growth Pass Conclusions:						Pass		
_	The conventio	l: 1: Pesitiv	e Controls; 2: After con	ventional	sycle; 3:		ie Cycle.	nisms in mirco fiber mops.	
	ve, Mississauga, Onta		nent Corporation			This repor	t may not be	reproduced, except in full, without, writ	STRICTLY CONFIDENTIAL ten permission from Gelda Scientific 2 10.1 See statements on reverse side

Positive Controls: Salmonella, Psedomonas



Positive Controls: S. aureus, E.coli



After Conventional Cycle: S.aureus, E.coli



Positive Controls: Salmonella, Psedomonas



After Ozone Cycle: S.aureus, E.coli



After Ozone Cycle: Salmonella, Psedomonas

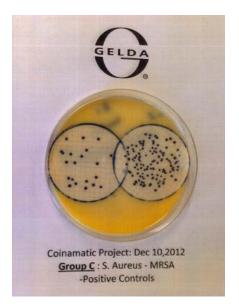


Group C: Staphylococcus aureus - MRSA - 99.99% bug kill

Conclusions: The conventional and ozone cycles were both equally effective in killing the test organisms in micro fiber mops.

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Reported to	Walid Z	ohuri		Report #	004	Page1/	
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Date Submitted	Dec: 10,2	2012		Date reported	Feb 11,13		
Product M	dicro Fibe	er Mons					
Test De	etermine the	e effectiveness of Environs	atic ozone disir	fection system in v	ush cycles usin	ng microbial	
	scoin-bi da	red Sep 11.2012					
Organism inocula into each cycle us X 4 micro fiber i	sing 4	micro fiber test material	(Not Less 75%)	(% kill	tional cycle)	Ozone Cycle (%Kill)	
2.5 X10/9		2.4 X10^9	96%	<10 (>	99.99%)	<10 (>99.99%)	
System controls		No Growth		Positive Contro	la D	355	
DD.MPSA Anne				No Growth		855	
DB-MRSA Agar Maps after disinf	control eye	ine .		NO GIOWIII	11.	0.55	
DB-MRSA Agar Mops after disinf Conclusions:							

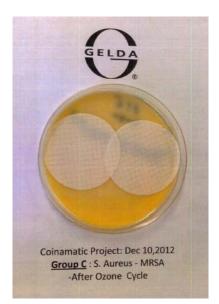
Positive Controls



After Conventional Cycle



After ozone Cycle



Group D: Clostridium Difficle - 99.99% bug kill

Conclusions: The conventional and ozone cycles were both equally effective in killing the test organisms in micro fiber mops.

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		L	ABORATO	RY ANALYSIS	REPORT					
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				File	World	oc/labrep/Coli	vornatie			
Date Submitte	d Mar 19,	d Mar 19,2013				1,2013 8,2013				
Product	Micro Fib	er Mops								
Test	Determine the	e effectiveness of Enviroma	tic ozone disi	infection system	in wash cycl	es using mi	crobial			
Protocol		ited Sep 11,2012								
Concentration Organism inoc into each cycle X 4 micro fib	ulated using 4	Recovery from the micro fiber test material	% Recove (Not Less 75%)	Then con	overy after ventional of kill)	ycle 0	ecovery after zone Cycle &Kill)			
0.82 X10^9		1.13 X10°9	138	<10) (>99.995	6) <	10 (>99.99%	(a)		
System contr Cl.difficile Se		No Growth		Positive Cor		Pass				
Mops after dis				No Growth	trois	Pass				
Conclusions:		one cycles were both er e Controls; 2: After con					n mirco fibe	r mops.		

Positive Controls



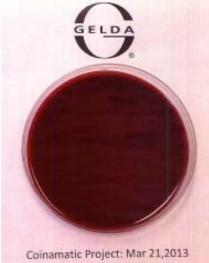
Coinamatic Project: Mar 21,2013 <u>Group C</u> : Cl. Difficle (10^-8 dilution) -Positive Controls

Conventional Cycle



Coinamatic Project: Mar 21,2013 Group C : Cl. difficle -Conventional Cycle

Ozone Cycle



Group C : Cl. difficle -Ozone Cycle

Group F: Streptococcus faecalis - 99.99% bug kill

Conclusions: The conventional and ozone cycles were both equally effective in killing the test organisms in micro fiber mops.

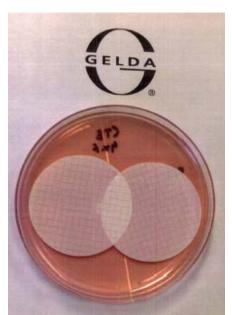
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retioned .	C007000.00.00						
		nal Say 11.2012 m: Group F: 5	Streptococcu	s faecalis (AT	CC 29212)		
esuits: Test meantation e rganism inocu to each cycle 4 micro fiber	Organisa of Test dated using 4		Streptoencen % Recovery (Not Less T 75%) 97%	hen (% kill	ry sfler the tional cycle	Recovery after Ocose Cycle (%Kil) <10 (>99,99%)	
exults: Test meantation or quarism incea- to each cycle 4 micro fiber 0 X10*9 estem contro	Organisa a'Test dated using 4 r motorial	m: Group F: 5 Recovery from the micro fiber test material 12.6 X80*9	% Recovery (Not Less T 75%) 97%	hen Recover conven (% kill) <10 (>	ry after the tional cycle) 99.99%)	Ozone Cycle (%Kil) <10 (>99.99%)	
	Organisa d'Test dated noing 4 r moterial ls	m: Group F: 8 Recovery from the micro fiber test material 12.6 X80*9 No Growth	*i Recovery (Not Less T 75%) 97%	hen (% kill	ry after the tional cycle 99,99%) s Pi	Ozone Cycle (NKII)	

Positive Controls



Coinamatic Project: Jan 8,2013 <u>Group F</u> : S. faecalis -Positive Controls

After Conventional Cycle



Coinamatic Project: Jan 8,2013 <u>Group F</u> : S. faecalis -After Conventional Cycle

After Ozone Cycle



Coinamatic Project: Jan 8,2013 Group F : S. faecalis -After Ozone Cycle

Group G: VRE - Vancomycin Resistant Enterococcus - 99.99% bug kill

Conclusions: The conventional and ozone cycles were both equally effective in killing the test organisms in micro fiber mops.

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Date Submitted	Jan 3,20	113		Dete	reported	Feb 11,13		
Product	Micro Fib	er Mana						
Test	Determine th	e effectiveness of Environ	atic opena dia	infection a	ysten in w	eek cyclee ue	ing micrabial	
	markers CALCENTS	tiol by 11393						
Concentration o Organism inoce into each cycle X-4 micro fibe	doted using 4	Recovery from the micro fiber test material	% Recov (Not Les 75%)			ry after the ional cycle	Recovery after Oxone Cycle (%KIII)	
20.0 3110 9		16.88 X10*9	84.	476	<10 (>	99.99%	<10 (>99.99%)	
System contro ME+Vana Aga		No Growth		Positive	Control	s P	2010	
Mops after disi				No Gro			lass	
	t I: Positiv	e Controls; 2: After on	rventional c	yde: 5		e Cycle.	sens in mireo fiber mops.	
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Positive Controls



After Conventional Cycle

After Ozone Cycle



Formerse Project: An 3,2012 Engeneric Project: An 3,2012



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