



WhiteWater



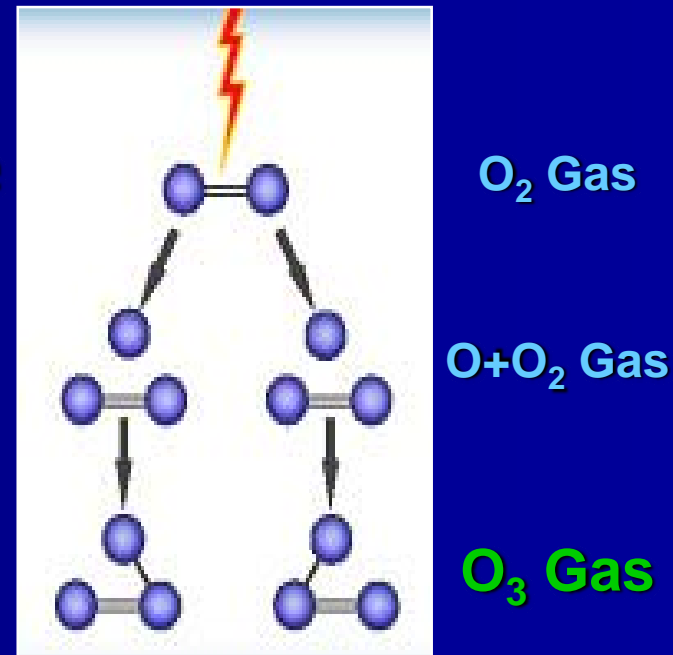
O3innovations

About O3 Innovations

- Created to market ozone based sanitizing solutions
- Headquarters in Montreal, offices in Toronto and Vancouver
- 40,000 square foot warehouse in Montreal
- Hand wash and hard surface sanitizing (Opura) and industrial large scale hard surface cleaning solutions (Whitewater)

About Ozone

- Oxygen is two atoms of oxygen (O) that form one molecule (O_2)
- Ozone is simply three atoms of oxygen that combine to form ozone (O_3)
- Ozone is artificially created by passing dry air through a high voltage electric charge
- Aqueous ozone is created by dissolving ozone gas into water



Properties of Ozone

- Ozone is very unstable and must be produced at point of use
- Powerful oxidizer - 50 times more powerful than chlorine, 3,000 times faster acting
- Half life of aqueous ozone is 30 minutes
- Non toxic, non carcinogenic



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- Effective on all organic matter – bacteria, viruses, fungi, spores, protozoa, fungal pathogens, yeasts, cysts, algae
- Created at point of use – no storage or transportation of hazardous chemicals
- Short half life and return back to oxygen means no residue
- Produces no toxic byproducts when consumed; unlike chlorine
- Degreasing properties
- Widely used in USA since 2001 - stable, problem free

Efficacy of Ozone – a non-discriminatory sanitizer

BACTERIA	BACTERIA	BACTERIA	FUNGUS & MOLD SPORES	FUNGAL PATHOGENS	ALGAE
Achromobacter butyri NCI-9404	Micrococcus candidus	Streptococcus hemolyticus	Aspergillus candidus	Alternaria solani	Chlorella vulgaris
Aeromonas harveyi NC-2	Micrococcus caseolyticus KM-15	Streptococcus lactis	Aspergillus flavus (yellowish-green)	Botrytis cinerea	Thamnidium
Aeromonas salmonicida NC-1102	Micrococcus sphaeraeoides	Streptococcus salivarius	Aspergillus glaucus (bluish-green)	Fusarium oxysporum	Trichoderma viride
Bacillus anthracis	Mycobacterium leprae	Streptococcus viridans	Aspergillus niger (black)	Monilinia fructicola	Verticillium albo-atrum
Bacillus cereus	Mycobacterium tuberculosis	Torula rubra	Aspergillus terreus,saitoi & oryzae	Monilinia laxa	Verticillium dahliae
B. coagulans	Neisseria catarrhalis	Vibrio alginolyticus & anguillarum	Botrytis allii	Pythium ultimum	
Bacillus globigii	Phytomonas tumefaciens	Vibrio cholerae	Colletotrichum lagenarium	Phytophthora erythroseptica	
Bacillus licheniformis	Proteus vulgaris	Vibrio comma	Fusarium oxysporum	Phytophthora parasitica	
Bacillus megatherium sp.	Pseudomonas aeruginosa	Virrio ichthyodermis NC-407	Grotrichum	Rhizoctonia solani	
Bacillus paratyphosus	Pseudomonas	V. parahemolyticus	Mucor recomosus A & B (white-gray)	Rhizopus stolonifera	
B. prodigiosus	fluoriscens (biofilms)		Mucor piriformis	Sclerotium rolfsii	
Bacillus subtilis	Pseudomonas putida	VIRUS	Oospora lactis (white)	Sclerotinia sclerotiorum	
B. stearothermophilus	Salmonella choleraesuis	Adenovirus (type 7a)	Penicillium cycloplum		
Clostridium botulinum	Salmonella enteritidis	Bacteriophage (E.coli)	P. chrysogenum & citrinum	YEAST	
C. sporogenes	Salmonella typhimurium	Coxsackie A9, B3, & B5	Penicillium digitatum (olive)	Baker's yeast	
Clostridium tetoni	Salmonella typhosa	Cryptosporidium	Penicillium glaucum	Candida albicans-all forms	
Cryptosporidium	Salmonella paratyphi	Echovirus 1, 5, 12, &29	Penicillium expansum (olive)	Common yeast cake	
Coliphage	Sarcina lutea	Encephalomyocarditis	Penicillium egypciacum	saccharomyces cerevisiae	
Corynebacterium diphthriae	Serratia marcescens	Hepatitis A	Penicillium roqueforti (green)	saccharomyces ellipsoideus	
Eberthella typhosa	Shigella dysenteriae	HIV	Rhizopus nigricans (black)	saccharomyces sp.	
Endamoeba histolica	Shigella flexnaria	GD V11 Virus	Rhizopus stolonifer		
Escherichia coli	Shigella paradysenteriae	Onfectious hepatitis		CYSTS	
Escherichia coli	Spirillum rubrum	Influenza	PROTOZOA	Cryptosporidium parvum	
Flavobacterium SP A-3	Staphylococcus albus	Legionella pneumophila	Paramecium	Giardia lamblia	
Leptospira canicola	Staphylococcus aureus	Polio virus (Polioomyelitis) 1, 2 & 3	Nematode eggs	Giardia muris	
Listeria	Streptococcus 'C'	Rotavirus	Chlorella vulgaris (Algae)		
	Streptococcus faecalis	Tobacco mosaic	All Pathogenic and Non-pathogenic forms of Protozoa		
		Vesicular Stomatitis			

WhiteWater

What is it?

- Ozone International Inc. - developer of WhiteWater cleaning & sanitizing technology
- Five existing US patents
- O3 Innovations exclusive Canadian distributor
- Uses low pressure ozone with high pressure water to clean & sanitize simultaneously



Before WhiteWater

CHOOSE

QUALITY

- Soil buildup
- Bacterial growth
- Cross contamination

PRODUCTIVITY

- Maximize processing cycle



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After WhiteWater

QUALITY



PRODUCTIVITY

- Soil buildup
- Bacterial growth
- Cross contamination

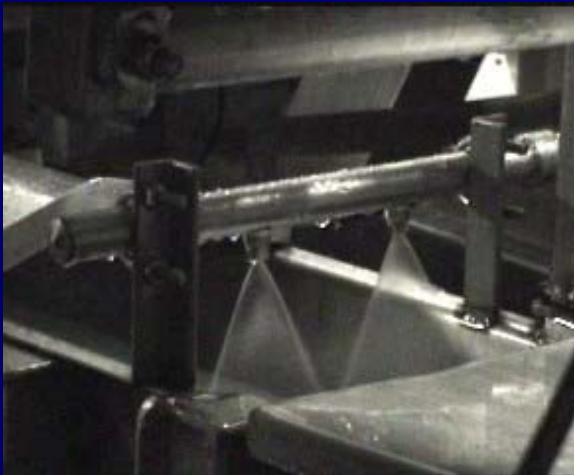
- Maximize processing cycle

WhiteWater
"best of both"

WhiteWater Applications

1. Continuous application

Cold, low-pressure aqueous ozone applied continuously during processing. Controls the buildup of soils and bacteria





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2. Intervention cleaning (during breaks, lunch, shift changes)

Cold, low-pressure aqueous ozone combined with high pressure water to clean soil and sanitizing critical control areas



3. End of process cleanup

Cold, low-pressure aqueous ozone combined with high pressure cold water to clean entire processing facility



Typical Uses

Continuous

- Spray bars on conveyor belts
- Spray bars on cutting , peeling and other processing equipment

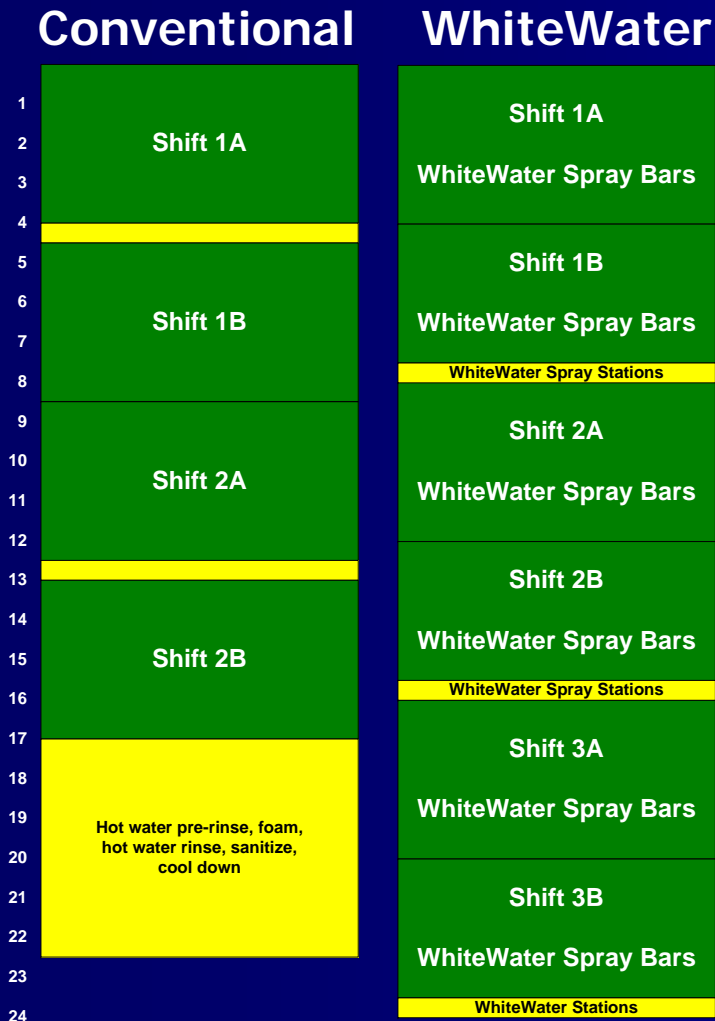
Intervention

- Power clean & sanitize conveyor belts
- Power clean critical control points – cutting equipment, areas of soil build-up
- Manual processing stations, tables (use spray stations)

Typical Uses

End of process cleanup

- Cleaning stations using low pressure aqueous ozone + high pressure cold water



Conventional Sanitation vs. WhiteWater

Conventional Sanitation

16 hrs (67%) production
5.5 hrs (23%) sanitation
2.5 hrs (10%) unutilized
0% labor reduction

WhiteWater

22.5 hrs (94%) production
1.5 hrs (6%) sanitation
50% labor reduction

RESULTS

6.5 hrs more production
72% less sanitation time
50% less sanitation labour



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What will WhiteWater do for you?

- Reduce conventional chemical usage
- Reduce sanitation labour cost and simplify SSOP
- Increase production capability
- Increase food safety (E.coli, Listeria, etc.)
- Reduce threat of cross-contamination
- Introduce an environmentally friendly/**green** solution – no toxic by-products
- Increase worker safety