

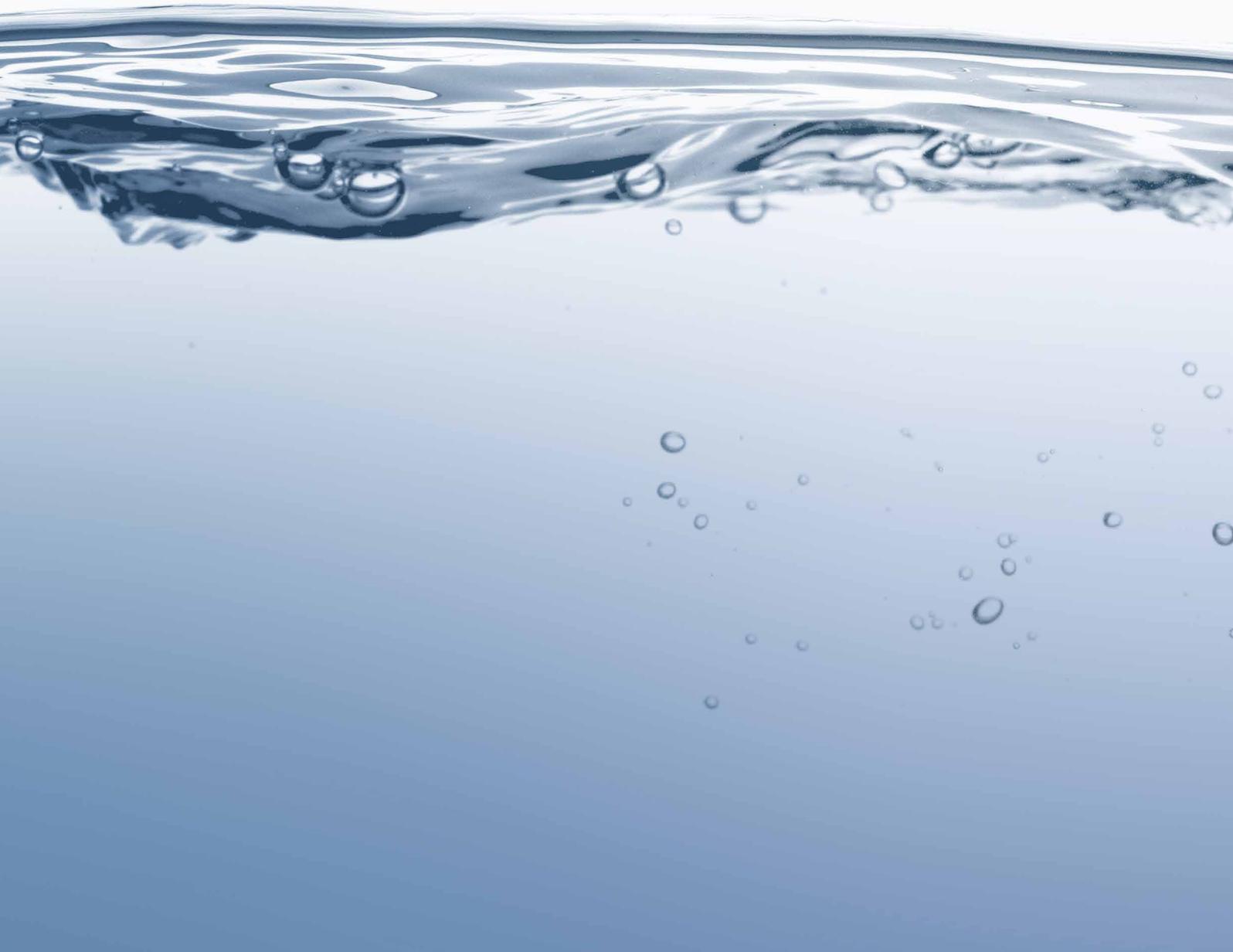
PEROXSIL®

COMPREHENSIVE WATER HYGIENE & SANITATION



PEROXISIL[®]

COMPREHENSIVE WATER HYGIENE & SANITATION



PEROXSIL®

COMPREHENSIVE WATER HYGIENE & SANITATION

ULTRA STABILISED HYDROGEN PEROXIDE

INTRODUCING PEROXSIL®

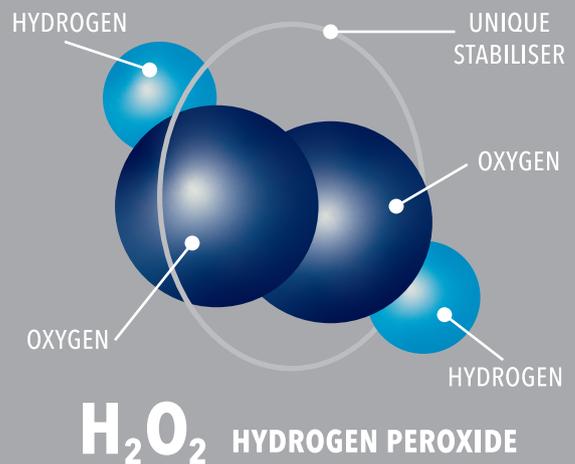
Peroxsil® is a powerful, highly effective broad-spectrum disinfectant that is both stable and safe.

When correctly applied to air, water and surfaces, Peroxsil® H₂O₂ that is stabilised using unique proprietary chemistry, will disinfect through an oxidation process, destroying microorganisms and pathogens and degrading into only water and oxygen without any harmful disinfection by-products.

Peroxsil® is environmentally friendly, does not form chlorinated by-products and will not hydrolyse to form an acid. Peroxsil® is an effective and safe method for removing the risk of parasites, bacteria, fungi, and viruses.

Peroxsil® is neither pH nor temperature dependant and is non-corrosive to manufacturing materials. The no rinse no neutralisation property of Peroxsil® makes its usage hassle-free. Eco-friendly water and oxygen residues make this biocide safe for animals and humans.

ULTRA STABILISED HYDROGEN PEROXIDE TECHNOLOGY



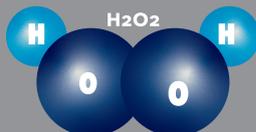
MANUFACTURED, ACCREDITED AND CERTIFIED



IN SOUTH AFRICA

HOW PEROXSIL® WORKS

BEFORE



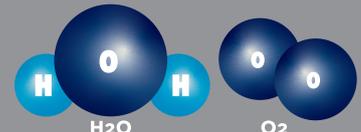
PEROXSIL® IS MADE UP OF
ULTRA STABILISED HYDROGEN
PEROXIDE - H₂O₂

DURING



PEROXSIL® IS ATTRACTED TO
MICROORGANISMS AND DISINFECTS
VIA A STRONG OXIDISING PROCESS

AFTER

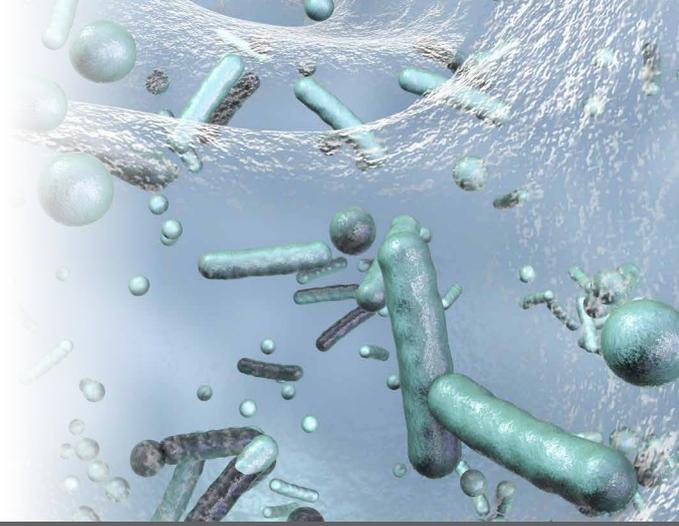


THE DISINFECTION BY-PRODUCTS OF
PEROXSIL® ARE WATER (H₂O) AND
OXYGEN (O₂)



PEROXSIL®

COMPREHENSIVE WATER HYGIENE & SANITATION



EVOLVING WATER HYGIENE AND BIO-SECURITY

PEROXSIL® IS HIGHLY EFFECTIVE AGAINST BIOFILMS

BIOFILM DEFINITION

A biofilm is a thick layer of prokaryotic organisms that have aggregated to form a colony. The colony attaches to a surface with a slime layer which aids in protecting the microorganisms. There are several reasons why biofilms are formed, all of which promote growth and survival of the microorganisms. Biofilms are found in almost all environments and can have negative effects.

BIOFILM STRUCTURE

The colony is adhered to a surface and coated with a polysaccharide layer (or slime layer). The slime consists of many porous layers with channels which allow the cells in the centre of the colony to receive nutrients and remove waste products. A biofilm is formed and maintained via cell-to-cell communication. A biofilm first forms when one or a few cells attach to a surface. These first cells produce proteins that act as signals to nearby cells. The signals are detected by neighbouring cells and essentially recruit new cells into the colony. As the nearby cells detect the chemical cues they aggregate and begin to form the biofilm. These cells then send out additional signals, recruiting more cells to the colony and growing the biofilm. The proteins also signal the development of polysaccharides that will form the slime layer. This slime layer forms over and around the growing colony.

BIOFILM FUNCTION

The microorganisms in a biofilm aggregate to form a colony for metabolic cooperation. This cooperative method of growth increases the cells' survival through improved resistance, increased availability of nutrients, and better opportunities for cellular communication and transfer of genetic material. Cellular resistance is important to combat physical threats such as displacement by a flowing fluid or removal by the immune system.

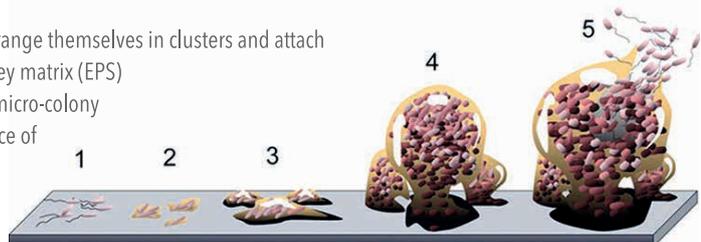
The polysaccharide coating on the biofilm acts as an adhesive to attach the colony to a surface. This prevents removal of the cells by physical force. It also prevents penetration of the biofilm by the immune system or antibiotics. Biofilms can be difficult to remove and can cause risks to human health. For example, with cystic fibrosis a biofilm can form in the lungs leading to adverse symptoms. Dental plaque is another example of a bacterial biofilm; this can lead to cavities and gum disease. Several other bacterial conditions may also be caused by biofilms including cholera, tuberculosis, and Legionnaire's disease.

BIOFILM REMOVAL

Due to low costs and established routines, chlorine disinfection is currently the main chemical strategy used to control microbiological threats in water systems. Unfortunately, high chlorine disinfection concentrations lead to an increase in the production of potentially carcinogenic by-products, such as haloacetic acids and trihalomethanes which are hazardous to health. Penetration of some layers is possible but will likely result in a wider issue as the damaged biofilm will disperse and spread to other surfaces. Biofilms' increased resistance to conventional disinfection processes and the potentially hazardous by-products of chlorine disinfection means that new approaches to biofilm removal are required.

Research has shown that Ultra Stabilised Hydrogen peroxide disinfectants had significantly higher bactericidal efficacy against biofilms than many other routine disinfection products. Substantial biofilm removal with Peroxsil® is achieved through the degradation of the extracellular matrix. Peroxsil® has depolymerizing properties. The production of hydroxyl radicals from hydrogen peroxide has been seen to be among some of the most effective agents at degrading biofilm. Peroxsil® is formulated to sustain the effectiveness of hydrogen peroxide's strong oxidising disinfection power. Unlike chlorine-based disinfectants, Peroxsil® creates no carcinogenic by-products. Once disinfection has completed, only water and oxygen are formed as by-products.

- Step 1** Free-swimming bacterial cells alight on a surface, arrange themselves in clusters and attach
- Step 2** The collected cells begin producing a protective gooey matrix (EPS)
- Step 3** The cells signal one another to multiply and form a micro-colony
- Step 4** Chemical gradients arise and promote the coexistence of diverse species and metabolic states
- Step 5** The biofilm reaches a critical mass and disperses bacteria, ready to colonize other surfaces



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NEXT GENERATION DISINFECTION

RESIDUAL EFFICACY

In general, bactericidal efficacy against biofilms differs by active ingredient. The efficacies of sodium hypochlorite, hydrogen peroxide and ultra stabilised hydrogen peroxide disinfectants are all well known. Sodium hypochlorite and hydrogen peroxide disinfectants meet most international standards for bactericidal efficacy against biofilms, however, ultra stabilised hydrogen peroxide meets and exceeds the EPA standard for bactericidal efficacy against all strains of biofilms.

PRODUCT COMPARISON CHART:

PEROXISIL® VS CHLORINE & OTHER DISINFECTANT

	PEROXISIL®	CHLORINE COMPOUNDS	CHLORINE DIOXIDE	QUATS	ALDEHYDES	PEROXIDES
PRODUCT DESCRIPTION	H ₂ O ₂ USHP	Hypochlorites (e.g. bleach) or N-chloro compounds	ClO ₂	Quaternary ammonium compounds (e.g. benzalkonium chlorides)	Formaldehyde Glutaraldehyde	H ₂ O ₂
MECHANISMS OF ACTION	Oxidation of DNA/RNA of microbes	Oxidation of SH-groups of vital enzymes. Denaturation of proteins.	Oxidation and denaturation of proteins	Denaturation of proteins and inactivation of enzymes	Alkylation SH-groups of proteins Denaturation of proteins	Oxidation of DNA/RNA of microbes (20 times less effective than Peroxisil®)
GERMICIDAL EFFICIENCY	Wide germicidal range. Effective biofilm remover.	Wide germicidal range. Does not remove biofilm.	Wide germicidal range, but not sporicidal. Not effective biofilm remover.	Limited germicidal activity, only effective against Gram+ bacteria, enveloped viruses and fungi. Not effective biofilm remover.	Wide germicidal range. Does not remove biofilm.	Wide germicidal range ineffective biofilm remover
GAPS IN ACTIVITY SPECTRUM	None	Efficacy depends on time, pH and organic matter	Efficacy depends on time	Efficacy depends on time, pH, soil contamination and water hardness	Efficacy depends on time, pH and organic matter	Short-term efficacy
HEALTH & SAFETY PROFILE	Non-toxic	Very toxic. THM production (carcinogenic).	Carcinogenic and genotoxic. Toxic by-products formed (e.g. chlorate, chlorite).	Low toxicity. No toxic by-products.	Highly toxic (FA is carcinogenic) FA forms chloromathylether (carcinogenic)	Non-toxic
ENVIRONMENTAL PROFILE	Completely biodegradable	Very little biodegradability. Must be neutralised before putting to drain.	Biodegradable. Must be neutralised before putting to drain.	Slowly biodegradable. Problems associated with chemical in waste water.	Readily biodegradable. Must be neutralised before putting to drain.	Completely biodegradable
MATERIAL COMPATIBILITY	Not corrosive	Extremely corrosive to metals, rubbers and fabric	Corrosive	Only corrosive at high concentrations, but generally compatible with all types of materials	Not corrosive	Corrosive

CERTIFIED, TESTED & APPROVED



Peroxisil® is certified to SANS meaning it meets the regulatory requirements for South Africa. Market leaders strive to attain SANS certification as a mark of distinction that provides their customers with assurance that the product is safe and effective. SANS 51276 | SANS 53727 | SANS 51650 | SANS 53624 | SANS 53704



Peroxisil® is certified and registered with the NRCS/8054/295864/242 - VC-8054:2017 - for a chemical disinfectant formulation for use in industrial, domestic, and institutional areas. Peroxisil® is registered in terms of the Compulsory Specification for chemical disinfectants (herein referred to as VC8054:2017) as published by Government Notice No. 1119 (Government Gazette No. 41186) of 20 October 2017.



PEROXISIL®

COMPREHENSIVE WATER HYGIENE & SANITATION



GUARANTEED SAFER DRINKING WATER FOR ALL

BRIEF EFFICACY DATA

Peroxsil® is a solution of Ultra Stabilised Hydrogen Peroxide that uses a unique and registered chemistry. When correctly applied to air, water and surfaces, Peroxsil® will disinfect through an oxidation process, destroying micro-organisms and pathogens. It simply degrades into water and oxygen without any harmful disinfection by-products.

PRESENTING TEST RESULT DATA FROM INDEPENDENT THIRD-PARTY LABORATORIES:

PEROXISIL® ULTRA STABILISED HYDROGEN PEROXIDE - EFFICACY DATA

SANS 51276:

Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas

TESTED ORGANISM	LAB REF	CONCENTRATION	CONTACT TIME	LOG REDUCTION	CONDITION	RESULT
<i>Enterococcus hirae</i>	ATCC10541	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass
<i>Escherichia coli</i>	ATCC10536	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass
<i>Pseudomonas aeruginosa</i>	ATCC 15442	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass
<i>Staphylococcus aureus</i>	ATCC 6538	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass

SANS 53727:

Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants for instruments used in the medical areas

TESTED ORGANISM	LAB REF	CONCENTRATION	CONTACT TIME	LOG REDUCTION	CONDITION	RESULT
<i>Escherichia coli</i>	ATCC10536	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass
<i>Enterococcus hirae</i>	ATCC10541	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass
<i>Pseudomonas aeruginosa</i>	ATCC 15442	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass
<i>Staphylococcus aureus</i>	ATCC 6538	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass

SANS 51650:

Quantitative suspension test for the evaluation of fungicidal and yeasticidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas

TESTED ORGANISM	LAB REF	CONCENTRATION	CONTACT TIME	LOG REDUCTION	CONDITION	RESULT
<i>Aspergillus brasiliensis</i>	ATCC 16404	3% H ₂ O ₂	15 Mins	>4	Clean	✓ Pass
<i>Candida albicans</i>	ATCC 10231	3% H ₂ O ₂	15 Mins	>4	Clean	✓ Pass

SANS 53624:

Quantitative suspension test for the evaluation of fungicidal and yeasticidal activity of chemical disinfectants and antiseptics used in the medical areas

TESTED ORGANISM	LAB REF	CONCENTRATION	CONTACT TIME	LOG REDUCTION	CONDITION	RESULT
<i>Aspergillus brasiliensis</i>	ATCC 16404	3% H ₂ O ₂	15 Mins	>4	Clean	✓ Pass
<i>Candida albicans</i>	ATCC 10231	3% H ₂ O ₂	15 Mins	>4	Clean	✓ Pass

SANS 53704:

Quantitative suspension test for the evaluation of sporicidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas

TESTED ORGANISM	LAB REF	CONCENTRATION	CONTACT TIME	LOG REDUCTION	CONDITION	RESULT
<i>Bacillus subtilis</i>	ATCC 11774	3% H ₂ O ₂	60 Mins	>4	Clean	✓ Pass

SANS 1853:

Disinfectants for use in the food industry

TESTED ORGANISM	LAB REF	CONCENTRATION	CONTACT TIME	LOG REDUCTION	CONDITION	RESULT
<i>Escherichia coli</i>	ATCC 10536	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass
<i>Aspergillus brasiliensis</i>	ATCC 16404	3% H ₂ O ₂	15 Mins	>3	Clean	✓ Pass
<i>Pseudomonas aeruginosa</i>	ATCC 15442	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass
<i>Pseudomonas aeruginosa</i>	ATCC 15442	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass
<i>Staphylococcus aureus</i>	ATCC 6538	3% H ₂ O ₂	5 Mins	>5	Clean	✓ Pass



PEROXISIL®

COMPREHENSIVE WATER HYGIENE & SANITATION



NEXT GENERATION DISINFECTANT

MULTIPLE APPLICATION METHODS

Depending on the purpose of use, Peroxisil® has multiple application methods. These applications include, ULV cold fogging, trigger bottles, knapsack pressure sprayers, humidifiers, automated dosing systems and many more.



PEROXISIL® - SUGGESTED DOSAGE RATES

MARKET	APPLICATION	% REQUIRED	PEROXISIL® VOLUME	CONTACT TIME
ANIMAL HUSBANDRY	Continuous In-Line Dosing Disinfection	0.005%	0.01 ℓ Peroxisil® into 99.99 ℓ Water	Continuous
	Pressure Spray Disinfection - Floors, Surfaces, Walls & Equipment	5.0%	2.5 ℓ Peroxisil® into 22.50 ℓ Water	60 Minutes
	Systems Disinfection & Biofilm Removal	3.0%	6 ℓ Peroxisil® into 94 ℓ Water	24 Hours
	ULV Cold Fogging - Full Room Disinfection	3.0%	1.5 ℓ Peroxisil® into 23.5 ℓ Water	30 Minutes
	Livestock disinfection (Dip/Spray)	1.0%	0.5 ℓ Peroxisil® into 24.5 ℓ Water	
FOOD AND BEVERAGE	Continuous In-Line Dosing Disinfection	0.005%	0.01 ℓ Peroxisil® into 99.99 ℓ Water	Continuous
	Beverage Line Disinfection	0.25%	0.50 ℓ Peroxisil® into 99.50 ℓ Water	24 Hours
	Bottle Rinsing Disinfection	0.01%	0.02 ℓ Peroxisil® into 99.98 ℓ Water	Continuous
	Pressure Spray Disinfection - Floors, Surfaces, Walls & Equipment	5%	2.5 ℓ Peroxisil® into 22.50 ℓ Water	60 Minutes
	Pressure Spray Disinfection - On Tank Surfaces	3%	1.5 ℓ Peroxisil® into 23.5 ℓ Water	60 Minutes
HEALTHCARE INSTITUTIONS	Continuous In-Line Dosing Disinfection	0.005%	0.01 ℓ Peroxisil® into 99.99 ℓ Water	Continuous
	Pressure Spray Disinfection - Floors, Surfaces, Walls & Equipment	3%	1.5 ℓ Peroxisil® into 23.5 ℓ Water	60 Minutes
	Shock Systems Disinfection & Biofilm Removal	4.00%	8 ℓ Peroxisil® into 92.00 ℓ Water	24 Hours
	Systems Disinfection & Biofilm Removal	0.40%	0.80 ℓ Peroxisil® into 99.20 ℓ Water	Continuous
	ULV Cold Fogging - Full Room Disinfection	3%	1.5 ℓ Peroxisil® into 23.5 ℓ Water	30 Minutes
POTABLE WATER SYSTEMS	Continuous In-Line Dosing Disinfection	0.005%	0.01 ℓ Peroxisil® into 99.99 ℓ Water	Continuous
	Maintenance Shock Disinfection	0.05%	0.10 ℓ Peroxisil® into 99.90 ℓ Water	1 Hour
	Major Shock Disinfection	3.00%	6 ℓ Peroxisil® into 94 ℓ Water	8 Hours
	Pressure Spray Disinfection - Floors, Surfaces, Walls & Equipment	3%	1.5 ℓ Peroxisil® into 23.5 ℓ Water	60 Minutes
PROTECTIVE CULTIVATION	Continuous In-Line Dosing Disinfection	0.01%	0.01 ℓ Peroxisil® into 99.99 ℓ Water	Continuous
	Pressure Spray Disinfection - Floors, Surfaces, Walls & Equipment	0.01%	6 ℓ Peroxisil® into 94 ℓ Water	Continuous
	Shock Systems Disinfection & Biofilm Removal	4.00%	8 ℓ Peroxisil® into 92.00 ℓ Water	24 Hours
	Systems Disinfection & Biofilm Removal	0.40%	0.80 ℓ Peroxisil® into 99.20 ℓ Water	Continuous
	ULV Cold Fogging - Full Room Disinfection	3%	1.5 ℓ Peroxisil® into 23.5 ℓ Water	
SPORT AND LEISURE	Continuous In-Line Dosing Disinfection	0.005%	0.01 ℓ Peroxisil® into 99.99 ℓ Water	Continuous
	Jacuzzi/ Hot Tub	0.03%	0.06 ℓ Peroxisil® into 99.94 ℓ Water	Continuous
	Pressure Spray Disinfection - Floors, Surfaces, Walls & Equipment	3%	1.5 ℓ Peroxisil® into 23.5 ℓ Water	60 Minutes
	Swimming Pool Shock	0.01%	10 ℓ Peroxisil® into 50 000 ℓ Water	12 Hours



The above chart is for representational purposes only.

For added technical support, contact www.peroxisil.com or scan this QR code to easily calculate any dilution.



PEROXISIL®

COMPREHENSIVE WATER HYGIENE & SANITATION



WATER HYGIENE IS IN OUR DNA

CONSTANT DOSING SYSTEMS

A dosing pump is a small, positive displacement pump. It is designed to pump a very precise flow rate of a chemical or substance into either a water, steam or gas flow. A dosing pump will deliver this precise flow rate of chemical or other product by several different methods. It generally involves drawing a measured amount into a chamber and then injecting this volume of chemical into the pipe or tank being dosed. Dosing pumps are used in a variety of applications from agriculture, industry, manufacturing to medicine.

The Tekna Evo solenoid dosing pump system is equipped with all adjustment and activation functions for water treatment and the dosing of Peroxsil®.

COMPATIBLE:

- ✓ PVDF pump head and ceramic ball valve as standard
- ✓ PVDF is suitable for almost all chemical used in the Industrial, Wastewater
- ✓ Treatment and potable water applications
- ✓ The use of Ceramic balls as standard improves the pumping reliability and the chemical compatibility of the whole liquid end
- ✓ Full chemical compatibility

RELIABLE:

- ✓ Long life diaphragm tested to give 5 years working life
- ✓ The advanced design and manufacturing process allows the diaphragm to have a unique life expectancy
- ✓ Made of pure solid PTFE, the diaphragm is compatible with most chemicals
- ✓ The diaphragm has been tested over a period of 5 years giving superior results
- ✓ Routine diaphragm replacement is no longer a requirement
- ✓ Reduced maintenance

STEADY DOSING PERFORMANCE:

- ✓ Stabilised Multi Power Supply 100÷240 Vac 50/60 Hz with reduced consumption
- ✓ Reduced power consumption as the solenoid only draws the required power to activate the pump, based on the working conditions
- ✓ Stable dosing performance: improve pump efficiency as performance is not affected by power supply fluctuations

INTUITIVE PROGRAMMING:

- ✓ A new concept of programming menu
- ✓ Programming menus are self-explanatory
- ✓ Intelligent Display, once a function is selected the pump will only display the parameters to set, which are linked to the selected function

PRE-DOSING REQUIREMENT

- ✓ Appropriately sized pulse flow meter – sold and specified separately
- ✓ 240v electrical supply available
- ✓ Injection point must be within 5 meters of dosing system
- ✓ Injection system that features a 12-millimetre female tee on the water pipe
- ✓ N/B! Peroxsil® cannot be dosed directly in copper piping. The injection point for the dosing system nozzle needs to be in the centre of a 1-meter section of PVC pipe



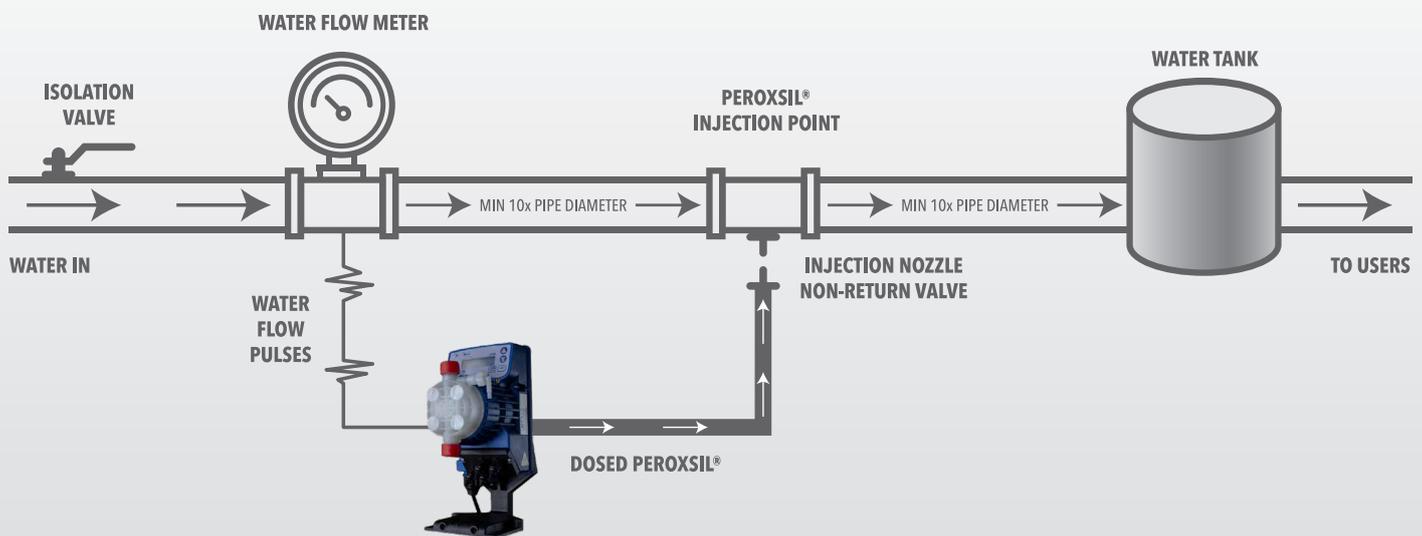
PEROXISIL®

COMPREHENSIVE WATER HYGIENE & SANITATION

ADVANCING WATER SANITATION



TYPICAL CONSTANT DOSING INSTALLATION



COPPER PIPEWORK WARNING:

Peroxsil® cannot be dosed directly into copper piping.

The injection point for the dosing system nozzle needs to be in the centre of a 1 meter section of PVC pipe.



PEROXISIL®

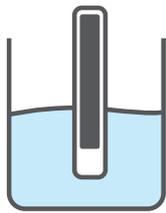
COMPREHENSIVE WATER HYGIENE & SANITATION



HYGIENE & SANITATION FOR BETTER HEALTH

TESTING SOLUTION

Checking the residual concentration of Peroxisil® in water is made very simple by test strip indicators.



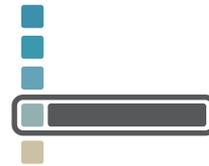
DIP
for 2 seconds



SHAKE
a few times



WAIT
for 30 seconds



COMPARE
results on test strip



PACKAGING & NATIONAL DISTRIBUTION

Sold in concentrate or ready to use formula for total disinfection for both indoor and outdoor spaces. This biocide is effective against, bacteria, coliforms, viruses, fungi, algae, spores & protozoa. Safe for humans, animals, fresh produce and most material of construction.



PEROXISIL®

COMPREHENSIVE WATER HYGIENE & SANITATION

DISTRIBUTED THROUGHOUT SOUTH
AFRICA IN 1000 LITRE FLOW-BIN,
25, 10 & 5 LITRE DRUMS

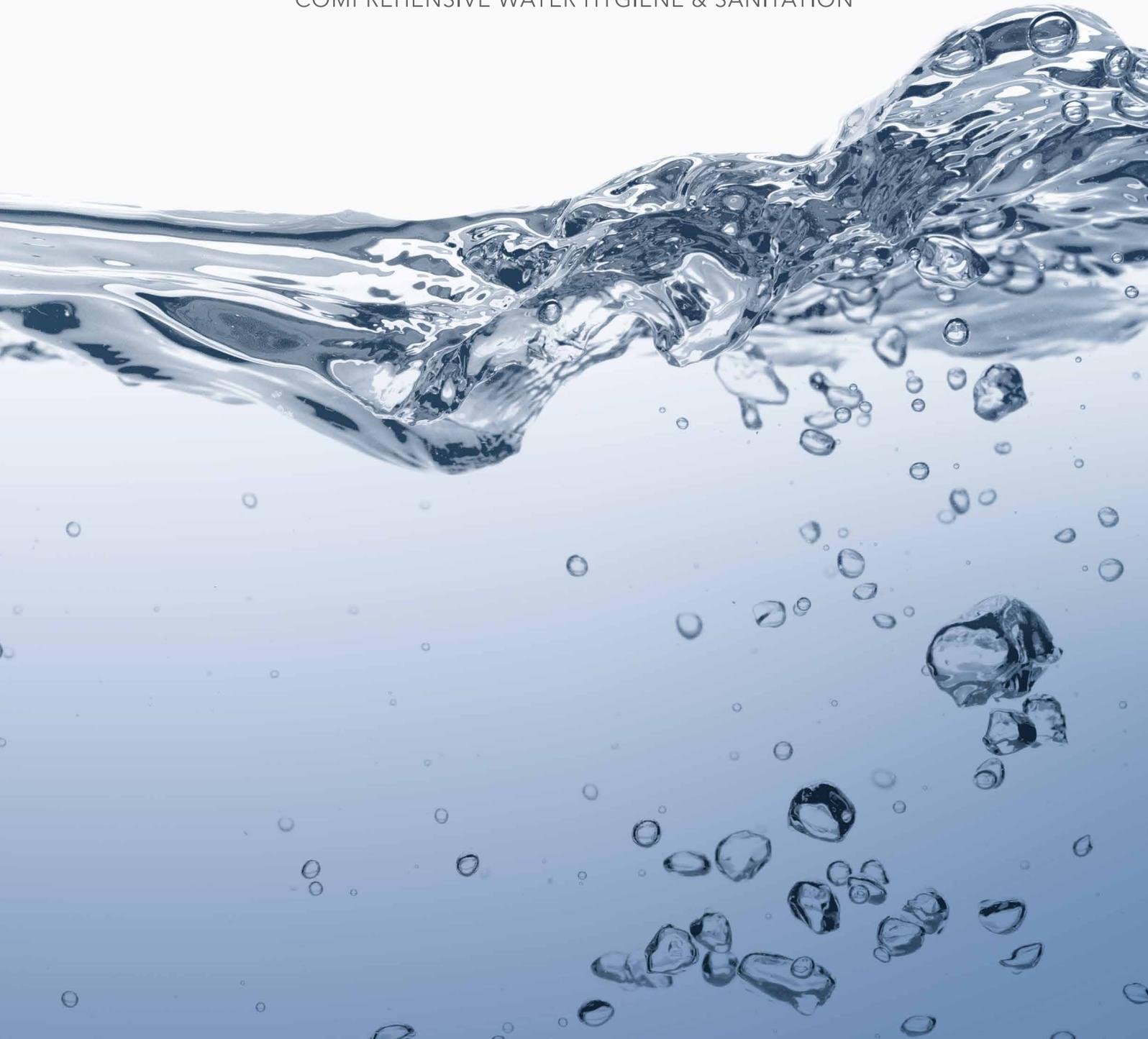
Peroxisil® www.peroxisil.com

Please contact us for technical assistance with specific applications.

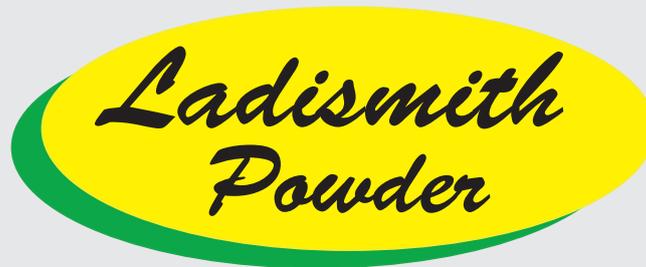


PEROXISIL®

COMPREHENSIVE WATER HYGIENE & SANITATION



DISTRIBUTED BY



THE HEART OF DAIRY GOODNESS

www.peroxsil.com

FOR MORE INFORMATION, PLEASE CONTACT US:

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