

# HORTISAN®

## THE ULTIMATE MICROBIOCIDES



Fruit and vegetable growers have a regular battle with controlling plant and crop diseases, as maintaining pathogen-free environments is vital for successful operations. Most plant diseases are caused by fungal or fungal-like microorganisms and other serious diseases of food crops are caused by viral or bacterial organisms. These plant pathogens can rapidly cause devastating plant diseases, resulting in poor plant health, stunted growth and substantial yield losses.

**HORTISAN** = Chlorine Dioxide (ClO<sub>2</sub>) gas in an aqueous solution that is an exceptionally powerful broad-spectrum and non-residual fungicide, algacide, virucide and bactericide, registered to control and inactivate plant pathogens on a wide variety of plants and crops. This solution is universally recognised as one of the most effective, safest and environmentally harmless biocides available and is used for a wide range of applications where effective control of microbial activity is essential.

- **PLANT PATHOGEN CONTROL** – Provides effective & sustainable pre-harvest control of fungi, bacteria & moulds, as well as other plant pathogens, in a wide variety of plant crops.
- **BIOSECURITY SOLUTION** – Very powerful and effective disinfectant and sterilising agent, perfect for multiple applications to control pathogenic microorganisms and prevent cross-contamination.

**HORTISAN** - The superior performance coupled with its unrivalled safety and environmental benefits makes it the ultimate biocide and the perfect choice for multiple applications to maximise yields, enhance product quality and eliminate product recalls, ultimately protecting public health and increasing consumer satisfaction.

# FEATURES & BENEFITS

**HORTISAN** - A versatile broad-spectrum and high-level bactericide, fungicide, algaecide and sporicide that has several important advantages over traditional high-risk chemicals such as chlorine, hydrogen peroxide and sodium hypochlorite. ALPHASAN is not what is termed as “Stabilised Chlorine Dioxide”. This term is misleading as there is little or no ClO<sub>2</sub> in these so-called products.

HORTISAN is especially effective because it is impossible for bacteria and viruses to develop resistance to it. It has proven to be consistently reliable for the control of, but not limited to, the following pathogens:

Alternaria Zinniae	Penicillium expansum (Blue mould)
Botrytis (Grey mould)	Phytophthora Cinnamomi
Cryptosporiopsis perennans	Plasmopara Viticola
Erwinia Amylovora (Fire-blight)	Pythium Ultimum
Fusarium oxysporum	Sclerotinia

- **HIGH PERFORMANCE** – Rapidly & consistently eliminates harmful pathogens & microorganisms, & has over 2.5 X the oxidising power of waterborne chlorine. Proven to be consistently reliable & effective against bacteria, bacteria spores, viruses, protozoa, fungi, mildew & algae at up to 99.9999% (6-log reduction).
- **SAFETY** – Non-hazardous & completely safe to use. This solution does not have a maximum residue level (MRL) and is FDA GRAS.
- **ECONOMICAL** – Its efficacy at low concentrations & short contact times means it is very economical in use, with low capital & operating costs. As a ready-to-dilute single pack solution it is easy to implement & monitor. It costs about the same as other sanitizers but is more versatile & beneficial to the environment.
- **ECO-FRIENDLY** – Harmless to the environment & breaks down to common salt (NaCl). Does not chlorinate or form harmful DBPs, THM's or AOXs.
- **NON-TAINTING** – Does not affect the taste, smell or colour of produce. Once diluted it is virtually tasteless & does not have the strong odour issues associated with chlorine or peracetic acid. It is also non-corrosive.
- **APPROVALS:** MPI – ACVM Registered: P008106

USAGE RATES	
Apples & Pears	12 L/Ha – As required
Grapes	12 L/Ha – As required
Berry Fruits	10 L/Ha – As required
Tomatoes, Stone Fruit, Plums	0.01 g/L – As required
Vegetable Crops	0.01 g/L – As required
Kiwifruit, Blackcurrants	0.01 g/L – At flowering
Citrus	0.01 g/L – Use non-ionic wetting agent
Roses & Ornamentals	0.015 g/L – On flowers in bud
Turf (Golf Courses, Playing Fields etc.)	0.015 g/L – Use wetting agent

For sanitising harvesting equipment use 20mls of HORTISAN per litre of water

# **TYPICAL APPLICATIONS**

**HORTISAN** - Used wherever the highest standards of disinfection are required. This versatile broad-spectrum biocide is exceptionally effective and safe, and is used for multiple disinfection and biosecurity applications to provide complete protection from biological contaminants, without tainting or forming harmful disinfection by-products.

The solution is easily implemented into new or existing systems and can be applied via automatic dosing, spraying, fumigation or soaking. It may be safely applied directly onto seeds, foliage, flowers, fruit and vegetables, as well as the soil.

## **PRE-HARVEST PATHOGEN CONTROL**

**HORTISAN** – A very powerful and effective biocide for controlling and inactivating plant diseases and biological contaminants, used for treating soil, water, seeds, fruit trees, vegetable crops and nursery plants to maintain plant health and maximise yields. Used in orchards, vineyards, tunnel houses and in hydroponic systems.

This solution is a proven inactivator of botrytis, without leaving any residues or forming any harmful disinfection by-products, so there is no withholding period required before harvesting.

- ***Control & inactivate plant diseases (No with-holding period required)***
- ***Soil fumigation & soil drenching solution***
- ***Control odour-causing bacteria, algae, fungus, mould & mildew in commercial greenhouses & cultivation chambers***

## **HORTICULTURAL BIOSECURITY SOLUTION**

**HORTISAN** - Very powerful and effective disinfectant and sterilising agent, suitable for multiple applications to control pathogenic microorganisms and prevent cross-contamination. Used for disinfecting entire horticultural environments and equipment to ensure complete biosecurity protection and can be applied directly to floors, walls, food crates and water tanks as well as other surfaces and processing equipment. Proven to be exceptionally effective without harming the environment or corroding equipment.

- ***Disinfect & sterilize harvesting implements, processing equipment & packing benches***
- ***Disinfect & sterilize fruit & vegetable bins & crates, as well as seedling trays etc.***
- ***Effective sanitation of packing benches & processing equipment***

# HORTISAN®

Our technological advances have made it possible for us to produce a consistent 1000ppm aqueous solution of ClO<sub>2</sub> which has a minimum 6-month shelf-life and is sold in various container sizes. With our experienced Chemists we are ready to assist you in every aspect of the evaluation, design, implementation and long-term support of your Chlorine Dioxide requirements.

**Pack sizes:** 10L Containers, 60L Drums, 200L Drums & 1000L IBCs

**HORTISAN®** is a registered biocide, manufactured and marketed in NZ by:

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As the actual conditions of use and storage are out of our control, no liability is accepted for any loss or damage caused directly or indirectly through the use of our products. Intending users should satisfy themselves as to the suitability of this product for any particular purpose, by carrying out appropriate tests. For more information, usage instructions and health & safety directions please refer to our website.

USE DISINFECTANTS SAFELY. ALWAYS READ THE LABEL AND SDS BEFORE USE. HORTISAN® IS A REGISTERED TRADEMARK. ALL RIGHTS RESERVED.