

Swiftpure Sanitiser is the sanitiser for the 21st Century, developed and manufactured in New Zealand for New Zealand conditions.

**Effective against E-coli, Pseudomonas, S.aureus, P.aeruginosa, P.valgaris, Rotovirus**

**WHAT IS SWIFTPURE SANITISER?**

Swiftpure Sanitiser is chlorine dioxide manufactured subject to a patented process that ensures a stable and safe, easy to use solution which gives unsurpassed sanitation ability.

Swiftpure Sanitiser is presented so that it is readily diluted to suit your particular purpose.

It is not to be confused with stabilised chlorine dioxide in which there are only trace amounts of chlorine dioxide. Chlorite, or stabilised chlorite is also an oxidizing agent, it is not nearly as powerful as chlorine dioxide.

**HOW DOES SWIFTPURE SANITISER WORK?**

Chlorine Dioxide attacks the microorganism, by oxidising the cellular membrane

components, causing cell destruction. Organisms cannot build up resistance to the active ingredient.

**USES**

Dairy shed and vat sanitiser, kills algae on concrete, will it remove protein from dairy plants? Spray in your calf sheds, leaves no residues.

**WHAT ARE THE BY PRODUCTS?**

Swiftpure Sanitiser does not form carcinogenic chlorination by-products or build-up toxic by-products like bromates, giving it the least environmental impact of any biocide in use today.

**WHAT IS THE IMPACT OF THE USE OF CHLORINE DIOXIDE ON THE ENVIRONMENT?**

Recognised EPA NZ as 9.1d the lowest impact on the environment.

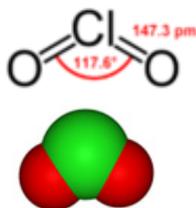
**CHLORINE DIOXIDE COMPARISON WITH OTHER COMMON SANITISERS**

	Chlorine dioxide	Hypochlorites	Quats
Efficacy	High	Moderate	Moderate
Microbial Range	Broad spectrum effective against all bacteria, virus, mold, fungi and spore formers	Ineffective against mold, virus, spore formers	Effective against all microorganisms except certain bacteria and spore formers
Dose	0.1 to 100ppm	100ppm to %	100ppm to %
Contact time	seconds to minutes	Minutes to hours	
Corrosivity	Negligible	High	Corrosive

Swiftpure Sanitiser is registered as a Maintenance Compound by MPI (C43) and a dairy input by both Asurequality and Bio-Gro (NZ).

**For the further applications details please refer to your representative.**

## Chlorine dioxide



<b>CAS number</b>	10049-04-4
<b>Molecular formula</b>	ClO <sub>2</sub>
<b>Molar mass</b>	67.45 g mol <sup>-1</sup>
<b>Appearance</b>	Yellow to greenish liquid
<b>Odour</b>	Acrid
<b>Density</b>	2.757 g dm <sup>-3</sup> [1]
<b>Melting point</b>	-59 °C (-74 °F; 214 K)
<b>Boiling point</b>	11 °C (52 °F; 284 K)

<b>Solubility in water</b>	8 g dm <sup>-3</sup> (at 20 °C)
<b>Solubility</b>	Soluble in alkaline and sulfuric acid solutions
<b>kH</b>	4.01 x 10 <sup>-2</sup> atm-cu m/mole
<b>Acidity (pKa)</b>	3.0(5)
<b>Std molar entropy So298</b>	257.22 J K <sup>-1</sup> mol <sup>-1</sup>
<b>Std enthalpy of formation ΔfHo298</b>	104.60 kJ/mol

### Antimicrobial Properties / Mode of Action

Swiftpure Sanitiser acts as an oxidizing agent and reacts with several cellular constituents, including the cell membrane of microbes. It breaks their molecular bonds, resulting in the death of the organism by the break-up of the cell and since the proteins involved in the structure then enzymatic function is broken, causing very rapid bacterial kills. The potency of chlorine dioxide is attributable to the simultaneous, oxidative attack on many proteins thereby preventing the cells from mutating to a resistant form. Additionally, because of the lower reactivity of chlorine dioxide, its antimicrobial action is retained longer in the presence of organic matter.

### Swiftpure Sanitiser the difference between a sanitiser and disinfectant

The difference between spore and bacterial inactivation is the difference between sterilization and disinfection. For a chemical agent to be classified as a sterilant, it must be demonstrated to have sporicidal activity.

Swiftpure Sanitiser is a true sanitiser.

Disinfection does not require the complete inactivation of microbial life and disinfectant claims may be substantiated by demonstrating bacterial inactivation capability.

### Environmental Impact

Swiftpure Sanitiser is the ideal choice to meet the challenges of today's environmentally concerned world.

Swiftpure Sanitiser chlorine dioxide is the environmentally preferred alternative to elemental chlorine. When chlorine reacts with organic matter, undesirable pollutants such as dioxins and bio-accumulative toxic substances are produced. Thus, the EPA supports the substitution of chlorine dioxide for chlorine because it greatly reduces the production of these pollutants. It is a perfect replacement for chlorine, providing all of chlorine's benefits without any of its weaknesses and detriments. Chlorine dioxide does not chlorinate organic material, resulting in significant decreases in trihalomethanes (THMs), haloacetic acids (HAAs) and other chlorinated organic compounds. This is particularly important in the primary use for chlorine dioxide, which is water disinfection. Other properties of chlorine dioxide make it more effective than chlorine, enabling a lower dose and resulting in a lower environmental impact.

### Registrations

MPI C43 no rinse sanitiser  
Asurequality Organic Dairy Input, Bio-Gro Dairy input

### Is Swiftpure Sanitiser chlorine dioxide (ClO<sub>2</sub>) the same as chlorine (Cl<sub>2</sub>)?

The active ingredient in Swiftpure Sanitiser, Chlorine dioxide, has chlorine in its name, but its chemistry is radically different from that of chlorine. Chlorine dioxide is not "chlorine in

disguise", but a totally different chemical with completely different chemistry.

### What are the differences between Swiftpure Sanitiser and stabilised chlorine dioxide?

It is not to be confused with stabilised chlorine dioxide in which there are only trace amounts of chlorine dioxide. Chlorite, or stabilized chlorite is also an oxidizing agent it is not nearly as powerful as chlorine dioxide.

### What happens to chlorine dioxide and chlorite when they enter the environment?

Chlorine dioxide is a very reactive compound and breaks down quickly in the environment. In air, sunlight rapidly breaks down chlorine dioxide into chlorine gas and oxygen. In water, chlorine dioxide quickly forms chlorite. Chlorine dioxide does not build up in the food chain.

### How can chlorine dioxide and chlorite affect my health?

Both chlorine dioxide and chlorite react quickly in water or moist body tissues. Breathing air containing chlorine dioxide gas may cause nose, throat, and lung irritation. Eating or drinking large amounts of chlorite salts may cause irritation in the mouth, oesophagus, or stomach. There is no evidence that chlorine dioxide or chlorite affect reproduction in humans.

Studies in animals exposed to high amounts of chlorine dioxide or chlorite have shown effects similar to those seen in exposed people.

### How likely are chlorine dioxide and chlorite to cause cancer?

There are no studies on cancer in humans exposed to chlorine dioxide or chlorite. Based on inadequate information in humans and in animals, the International Agency for Research on Cancer (IARC) and the EPA have determined that chlorine dioxide and sodium chlorite are not classifiable as to human carcinogenicity.

### How does chlorine dioxide perform against commonly found bacteria?

Independent laboratory tests have shown the following reductions against the following bacteria;

Pseudomonas	Log6
E-coli	Log6
S. aureus	Log7
P. aeruginosa	Log6
P. vulgaris	Log6

### Safety

Swiftpure Sanitiser is recognised as 9.1d (least harmful to the environment. Treat all chemicals with care and keep out of the range of children.

### Further Information

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