



Microbial Contamination

The old fashioned way to fight microbial contamination is to use chlorine in high and sometimes dangerous doses. In many situations the efficacy is not satisfactory for carcass washing, fruit and vegetable washing and the full control of e-coli and listeria. Other reasons are the negative effects on health, the (working) environment and the corrosiveness on equipment, and pipe systems.

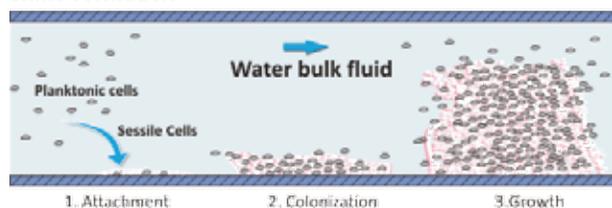
Chlorine has adverse effects on health and equipment. It gasses off in production facilities. It creates corrosion, organoleptic and taste problems. It is aggressive and hazardous to use, store and transport. It is ineffective outside of narrow pH levels, and does not kill viruses or remove slimes.

GO₂TM is a much stronger replacement for all chlorine users. GO₂TM will 100% remove slime from all water storage and distribution systems. Once slime has been eradicated, the dosage level of GO₂TM subsequently required to maintain a clean, healthy water system and to prevent recolonization by slime, can be significantly reduced, thereby delivering an ongoing cost-savings for the user.

The Problem of Slime in Water Systems

Slime grows very quickly in water systems. Planktonic cells flowing in the water clot together and form a layer of sessile cells, which attach to the inner walls of tubes and pipes. Colonies of cells grow rapidly, and attract more planktonic cells. The slime can grow and block free water flow, and forms a contamination which is a hazard for water quality.

Slime Formation



In existing water distribution systems, the distribution pipes are permanently contaminated with slime. Chlorine does not eliminate, or even inhibit, the growth of slime. GO₂TM removes slime within a short period of time. The hard layer requires longer time to remove, depending on the thickness of accumulation. The process of decontamination is completely safe and has no adverse side effects.

Health Issues

The key to the success of GO₂TM in controlling microbial contamination of water systems is? NOT that it can eradicate slime (sometimes called 'biofilm'). It's that it has a wide range of pathogens it can destroy including bacteria, viruses, fungi, spores and molds, and that, as opposed to say UV or Ozone, has a residual effect. In addition GO₂ is a powerful oxidizer of various chemical contaminants like iron, manganese, sulphides, amines and mercaptans, cyanides and phenols. GO₂ will also oxidize sulphides and prevent smells and rust associated with these chemicals.

The unique GO₂ two component concept delivers a powerful disinfectant for water systems and hard surfaces in a wide range of industries including food processing, medical, animal health, bottled water, soft drinks and brewing.

GO₂TM Unique Properties: Disinfection Properties

- A powerful oxidizing agent for organic materials
- Selective oxidizer for reduced chemical use
- Destroys algae-related taste and odor compounds
- Higher yield (up to 260% more oxidation output compared to chlorine)
- GO₂ does not chlorinate organic materials
- Decreases THM's, HAA's, TOX (Total Organic Halides), that are cancer causing agents
- Effectively removes prophylaxis on slimes
- Steady bactericidal efficacy within a broad range of pH levels (Bandwidth pH 4 to pH 10)
- 100% effective against all water-borne micro-organisms and spore forming bacteria (Bacteria, Viruses, Protozoa, Fungi and Sediment)
- No build-up of resistance in micro-organisms



Typical Installation of a GO2 dosing station:



Sprinkler Pen Application



Drop Hose Application

Results of injecting GO2 thru the drop hoses for one week



Before Startup



1 Week Later

The Power of GO₂TM

GO₂ has been extensively tested in several laboratories around the world. GO₂ kills a broad spectrum of harmful organisms, as indicated below:

Bacteria		Fungi	
Pseudomonas Aeruginosa	Campylobacter Jejuni	Candida Albicans	Trichophyton Rubrum
Pseudomona Specie	Flavobacterium Species	Scopulariosis Species	Aspergillus Niger
Enterobarcer Cloaceae	Yersinia Enterolitica	Trichophyton Mentagrophytes	Aspergillus Flavus
Enterobarcter Hafnia	Clostridium Sporogenus	Mucor Species	Fusarium Specie
Proteus Vulgaris	Clostridium Dificile	Saahromyces Cerevisiae	Fonsecaea Pedrosoi
Klebsiella Pneumoniae	Clostridium Perfingens		
Salmonella Typhi	Fusobacterium Nucleatum	Virus	
Salmonella Enteritidis	Bacilus Subtilis	Herpes Virus I	Poliovirus
Salmonella Gallinarum	Bacilus Circulans	Herpes Virus II	Encephalomyocerditis (EMS)
Salmonella Typhimorium	Bacilus Megatarium	Adenovirus Echovirus	Vaccina Virus
Salmonella Choleraesuis	Bacilus Cereus	Coxsakiavirus	Vesicular Stomatitis Virus (VSV)
Salmonella Typhosa	Bifedibacter Liberium	Influenza	Para Influenza
Corynebacterium Nucleatum	Staphylococcus Aureus	Feline Parvovirus	Bluetongue Virus
Sarcinae Lutae	Staphylococcus epidermia	Mouse Flu	Mouse Hepatitis Virus (MHV)
Streptococcus Pyrogenes	Streptococcus Faecalis	Minute Virus of Mice (MVM)	Mouse Encephalomyelitis Virus
Strep 1, 2, 3.	Mycobacteroi Bovis	New Castle Disease Virus	Mouse Polio Virus (MEV)
Mycobacterium Smegmatis	Mycobacterium kansaaii	Iridovirus	Pertiviries – Togaviridae
		Others	
		Vidrio Cholerae	Culex Quinquifasiatus
		Mycopiasm	