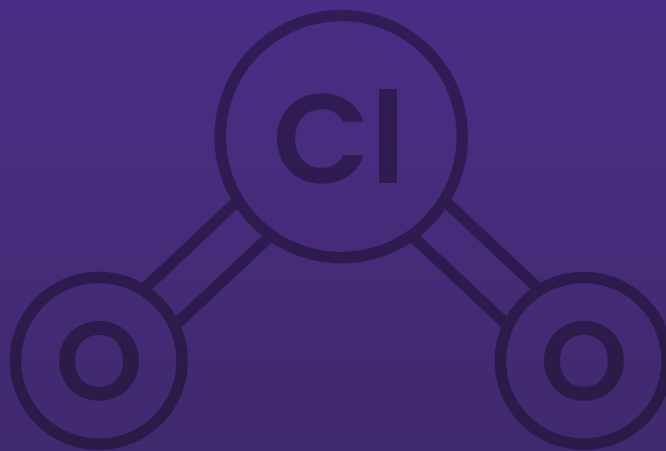


TRISTEL CHLORINE DIOXIDE (ClO_2) CHEMISTRY



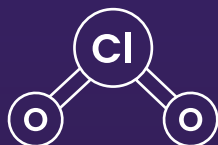
TristelTM

TRISTEL ClO_2 POWER

Tristel's proprietary chlorine dioxide (ClO_2) is an oxidising chemistry generated by combining sodium chlorite with citric acid. Chlorine dioxide is reactive and degrades rapidly in the environment into salts and water. It can effectively destroy a broad spectrum of microorganisms, including bacteria and their spores, viruses, fungi and yeast. ClO_2 disrupts chemical bonds in key proteins that form vital structures within the cell ensuring complete and effective disinfection.

MODE OF ACTION

As an oxidiser the ClO_2 molecule has a selective mode of action.



It is able to destroy pathogens through electron exchange, stealing electrons from the microorganism's structures. It reacts with cell walls, membranes, organelles, and genetic materials, causing a molecular imbalance that leads to the destruction of the microorganism. This allows ClO_2 to be effective at low active concentrations compared to other chemistries. This mechanism of action will prevent microorganisms from developing resistance to ClO_2 .

COMPATIBILITY

Tristel ClO_2 is compatible with a wide range of medical devices and surfaces. It has been tested and approved for use on over 2000 medical devices and many more surfaces globally, making it ideal for the healthcare environment.



INFECTION PREVENTION AND CONTROL WITHOUT COMPROMISE

Tristel ClO₂ offers sporicidal, high-level disinfection whilst delivering consistent results with one contact time and one dilution rate against microorganisms of concern.

EXCEPTIONAL EFFICACY

- ✓ *Staphylococcus aureus* (MRSA)
- ✓ *Enterococcus faecium* (VRE)
- ✓ *Acinetobacter baumannii* (MDRAB)
- ✓ *Neisseria gonorrhoeae*
- ✓ *Klebsiella pneumoniae* (CRE CPE ESBL)
- ✓ *Candidozyma auris* (formerly *Candida auris*)
- ✓ *Clostridioides difficile*
- ✓ Human papillomavirus (HPV types 16 & 18)



DISINFECTANTS COMPARISON

Active chemistry	Disinfection level	One contact time?	Minimum effective concentration (MEC) sporicidal action
Tristel ClO ₂	High	✓	100-200ppm
Chlorine (Cl ₂)	High	✗	5000ppm
Peracetic acid	High	✗	1,500ppm
Hydrogen peroxide (H ₂ O ₂)	High	✗	10,000ppm
Quaternary ammonium compounds (QACs)	Intermediate	✗	✗

EFFECTIVE AGAINST HPV

Tristel ClO_2 chemistry is effective against native human papillomavirus* (HPV types 16 & 18).¹



* Specific testing against HPV 16 and HPV 18 was conducted on Tristel DUO ULT and Tristel Sporidical Wipes (Meyers, 2020). All other chlorine dioxide products meet EN 14476 virucidal standards, which includes non-enveloped viruses.

RECOGNISED CHEMISTRY

Tristel ClO_2 is proven effective by peer reviewed studies, and recognised by multidisciplinary, national, and international guidelines.



HAZARD PROFILE

Tristel's chlorine dioxide solutions are not classified as hazardous at point of use according to GB CLP.

Unlike Chlorine, Tristel ClO_2 does not create halogenated (HAAs) and Trihalomethanes (THMs) byproducts; no chlorination occurs.^{2,3}



BIOFILM REMOVAL

Biofilms pose a significant challenge in the fight against hospital acquired infections. Tristel ClO_2 has been tested and shown to be effective in eliminating the bacteria within an established biofilm.



SIMPLE, FAST AND TRACEABLE PROCEDURES

The ease of use and the fast action of Tristel ClO_2 allows, effective and traceable decontamination procedures.



COMPLIANT

Tristel ClO_2 solutions are tested to international standards such as those within the EN 14885, including efficacy against bacterial spores (EN 17126, EN 17846).



References

1. Meyers, C., Milici, J. and Robison, R. (2020). The ability of two chlorine dioxide chemistries to inactivate human papillomavirus contaminated endocavitary ultrasound probes and nasendoscopes. *Journal of Medical Virology*, 92(8), pp.1298–1302. doi: <https://doi.org/10.1002/jmv.25666>
2. Hrudey, S.E. (2009). Chlorination disinfection by-products, public health risk tradeoffs and me. *Water Research*, 43(8), pp.2057–2082.
3. Ran, Y., Chen, Qing-min & Fu, Maorun (2019). Chlorine Dioxide Generation Method and Its Action Mechanism for Removing Harmful Substances and Maintaining Quality Attributes of Agricultural Products. *Food and Bioprocess Technology*, 12(7), pp.1110–1122. Springer Science+Business Media.

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