



DENTISTRY

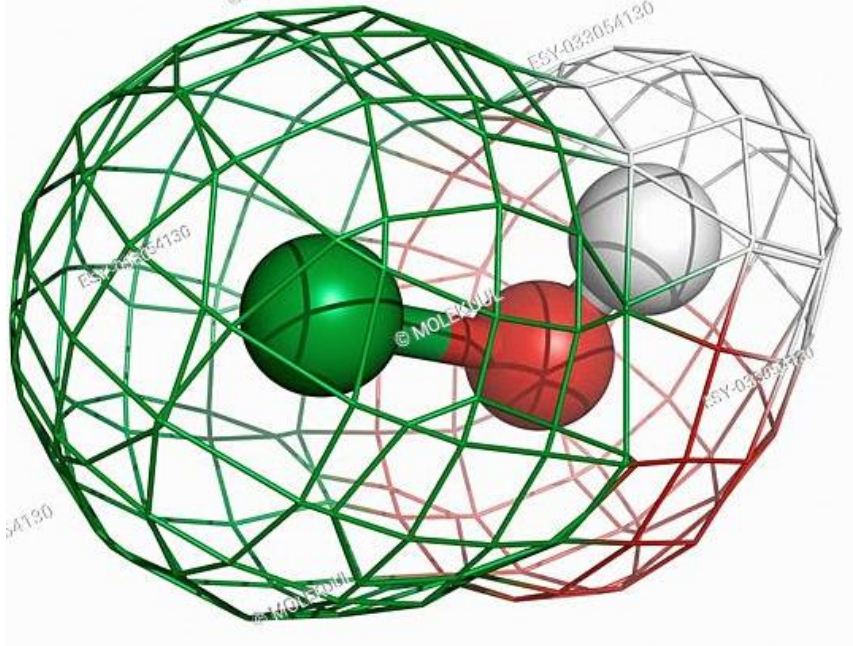


atm plus



Eco Utility Systems

Hypochlorous Acid (HOCl)



also known as

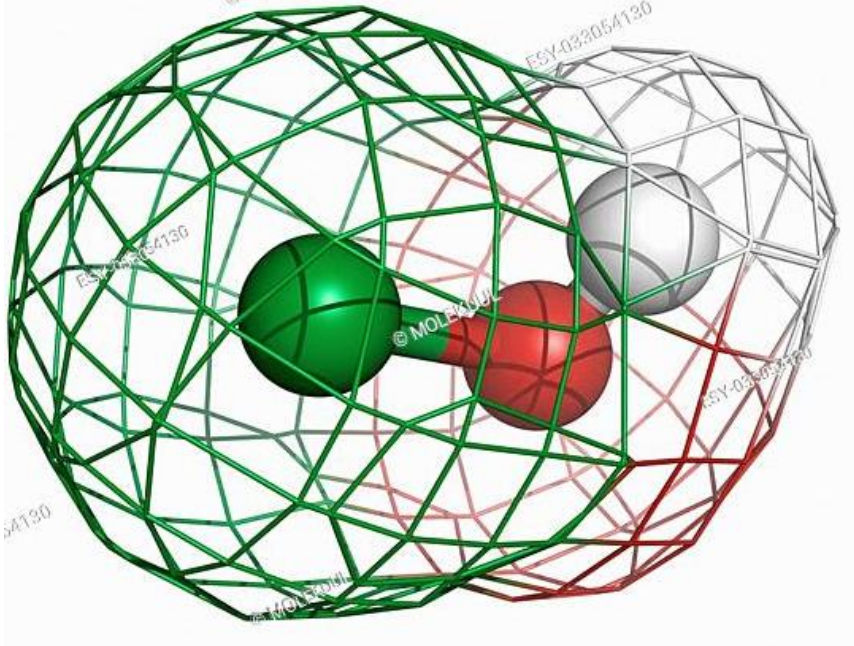
- electrolyzed water / electrolyzed reduced water
(ERW, EW)
- electrochemically activated water
(ECA)
- anolyte
(AEW, NEW, SAEW)

atm plus has a broad spectrum anti-microbial use



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Hypochlorous Acid (HOCl)



atm plus

most effective disinfectant in the chlorine family

- No polar charge
- Low molecular weight

PERFECT structure to penetrate CELL WALLS

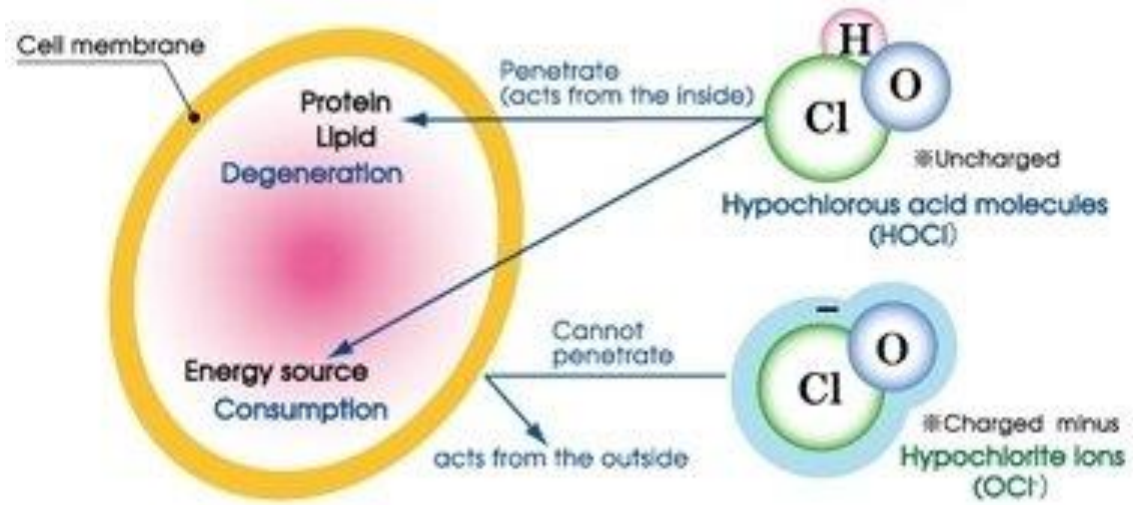
- HOCl is a WEAK ACID
- At a pH of 4 – 8.5 most available Chlorine is HOCl

NO RESIDUE after dissolving in water

- Solution stays active for
7 – 10 DAYS



Hypochlorous Acid (HOCl)



hypochlorousacid.com/about

- HOCl diffuse through cell membrane
- Without a polar charge it is not repelled
- OCl- (BLEACH) is unable to penetrate cell membrane due to **negative charge**
- Bleach can only clean on the EXTERIOR
- HOCl acts from INSIDE

atm plus most effective disinfectant in the chlorine family

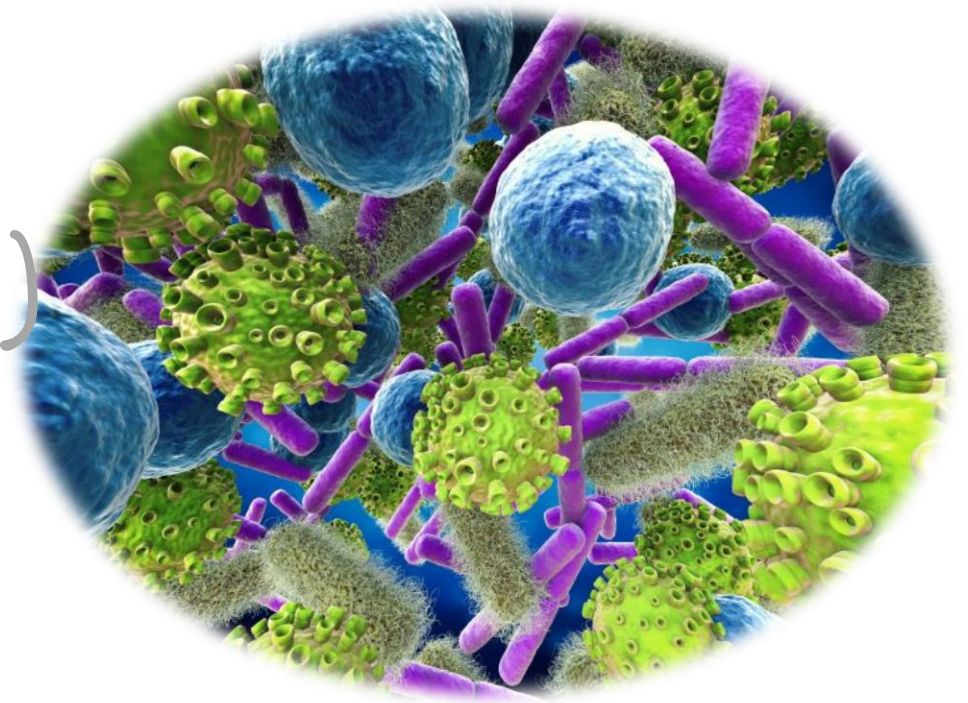


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NATURE of Hypochlorous Acid (HOCl)

- Natural component of our own immune systems
- Fights against infection
- Reduces inflammation
- Bio-degradable in the environment

atm plus organic, lethal, cost effective



**“Hypochlorous acid is
LETHAL to every pathogen
it has been tested against
but completely HARMLESS
to humans and other
mammals.”**



phagocytosis

[fag-uh-sahy-toh-sis]

noun

Physiology. the ingestion of a smaller cell or cell fragment, a microorganism, or foreign particles by means of the local infolding of a cell's membrane and the protrusion of its cytoplasm around the fold until the material has been surrounded and engulfed by closure of the membrane and formation of a vacuole: characteristic of amoebas and some types of white blood cells.



- Neutrophils (WHITE BLOOD CELLS) seek out pathogens (VIRUSES AND BACTERIA) and destroy them using HOCl
- HOCl causes necrosis (RUPTURING OF THE CELL) and destroys the cell contents
- While disinfecting, HOCl is {OXIDISED} and consumed
- The only by-product is slightly salty water



EFFECTIVENESS OF HOCl

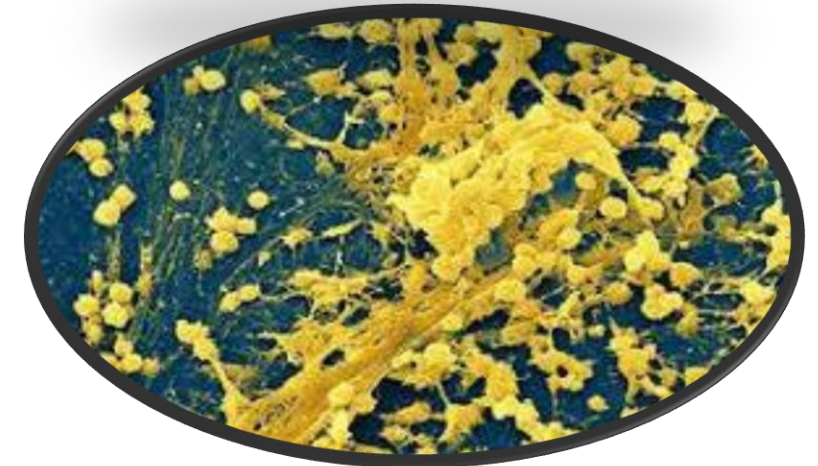
atm plus

disinfects and destroys:

- ✓ VIRUSES
- ✓ BACTERIA
- ✓ MOULDS
- ✓ FUNGI
- ✓ SPORES
- ✓ BIOFILMS

defends against:

- ✓ INFECTION
- ✓ RESISTANCE/TOLERANCE
- ✓ PATHOGENS BENEATH BIOFILMS
- ✓ FERMENTATION IN STORAGE



atm plus

80 – 100 times more effective than bleach



Eco Utility Systems

PROVEN EFFECTIVE AGAINST SARS-CoV-2

The latest peer approved scientific papers conclusively show that **HOCL effectively kills the SARS-Covid 2 virus**. The papers also compare HOCL to other disinfectants showing its comparative performance with other disinfectants such as bleach.

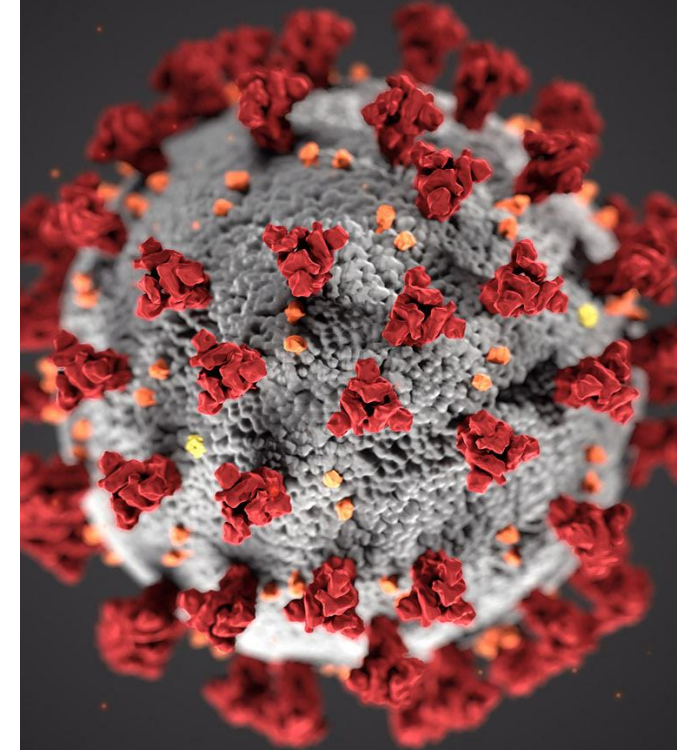
Chan K-H, Sridhar S, Zhang RR, Chu H, Fung AY-F,
Chan G, Chan JF-W,
To KK-W, Hung IF-N, Cheng VC-C, Yuen K-Y,
Factors affecting stability and infectivity of SARS-
CoV-2,
Journal of Hospital Infection,
<https://doi.org/10.1016/j.jhin.2020.07.009>.

‘The surgeon needs to have an **inexpensive, available, nontoxic, and practical** disinfectant that is effective in sanitizing against the COVID-19 (Coronavirus Disease 2019) virus.’

‘The results indicate that this material can be used with a **high predictability** for disinfecting against the COVID-19 (Coronavirus Disease 2019) virus.’

Michael S. Block, Brian G. Rowan,
Hypochlorous Acid: A Review,
J Oral Maxillofac Surg,
10.1016/j.joms.2020.06.029

atm plus 80 – 100 times more effective than bleach



Eco Utility Systems

atm plus

the effervescent tablet



HOCl concentrated into a 6 gram dissolvable tablet

1 tablet = 12.5l of disinfectant

consistent solution at 100PPM every time

active for 7 – 10 DAYS after dissolving
then returns to pure water

easy STORAGE

low TRANSPORT COSTS

1 year SHELF LIFE in tablet form

atm plus

effective at 25PPM to 200PPM depending on use



Eco Utility Systems

USES of atm plus

to name a few...

- DISINFECTING any and all surfaces
 - fresh fruit / veg preparation
 - hydroponics / irrigation
- AGRICULTURAL
 - pesticidal treatment
- LIVESTOCK
 - control / reduction of disease
 - improves digestion / feed conversion ratios
 - increase livestock yields
- MEDICINAL / DENTISTRY
 - mouthwash / wound care
 - waterline disinfection
 - scrubbing in

atm plus 100% organic, bio-degradable, MRL FREE



USES of atm plus

to name a few...

- HORTICULTURE
 - increase shelf life
 - reduces rotting / infection
- WATER TREATMENT
- FACILITIES
 - shopping centres
 - accommodation
 - office buildings
- TRANSPORT
 - airlines / airports
 - public transport
 - shipping / cruiseliners

atm plus safer exposure to humans than regular disinfectant



atm plus:

GENERAL USE

atm plus CAN BE USED TO CLEAN AND SANITIZE:

- Floors and walls
- Reception areas
- Staff and patients hands, clothes and shoes
- Food contact surfaces



'As a Disinfectant/Sterilant, HOCl has greater killing power than Chlorine, Chlorinated Water, Chlorine Dioxide, Sodium Hypochlorite, Hydrogen Peroxide and Ozone'

atm plus

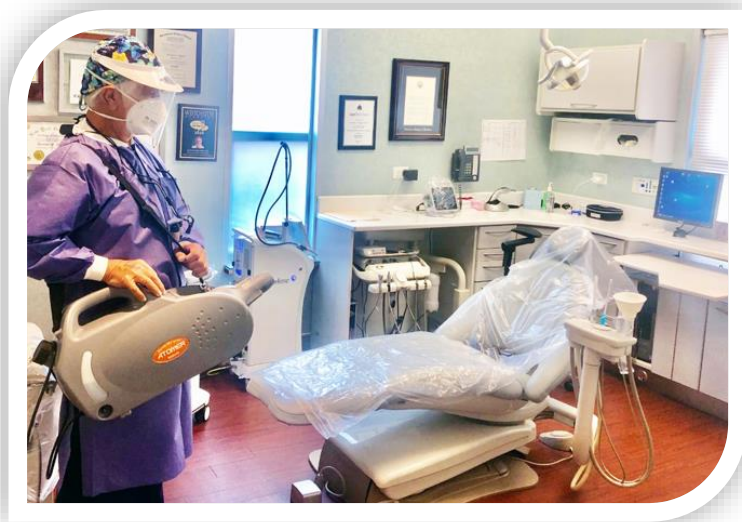
gentle, effective, safe – NO PPE NECESSARY



Eco Utility Systems

atm plus:

DENTISTRY



- DENTAL UNIT WATERLINE DISINFECTION
- AS A MOUTHWASH
- ENVIRONMENT / EQUIPMENT DISINFECTION
- AS ANTIPLAQUE AGENT
- COLD FOGGING AGAINST VIRAL AIR PARTICLES

Hypochlorous acid is NON-Cytotoxic so it won't harm human cells

atm plus reduces overall bacterial spread



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atm plus:

DENTISTRY

DESTRUCTION OF BIOFILM AND SCALE IN WATER LINES



atm plus

recommended use at 100 - 200PPM

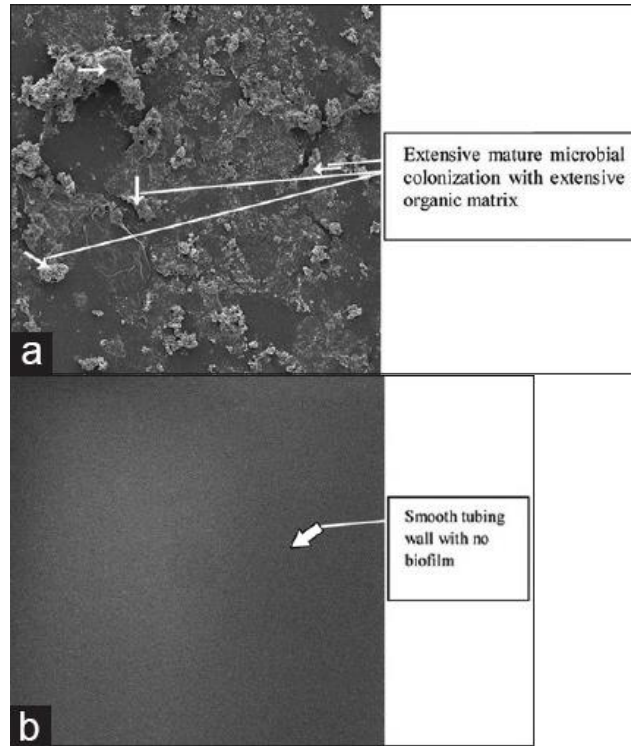


Eco Utility Systems

atm plus: DENTISTRY

DESTRUCTION OF BIOFILM AND SCALE IN DENTAL UNIT WATERLINES

- 13 New dental units
- Biofilm allowed to grow for 10 DAYS
- 12 Units Treated, 1 Untreated
- The results are definitive
- **Untreated** dental unit waterlines showed a **microbial colonization** with continuous filamentous organic matrix
- There was **no slime layer** or bacterial cells seen in any of the 12 **treated** dental waterlines which mean that there was **no evident of biofilm formation**



Scanning electron microscope images show the efficacy of the disinfectant or disinfection procedure.

- (a) The inner lumen wall of the cut section from the untreated dental waterlines (control tube) and the arrow indicates extensive mature microbial colonization with extensive organic matrix material.
- (b) (b) The inner lumen of the cut section of treated dental unit waterline (sample a) and the arrow indicates the smooth tubing wall with no biofilms

Shajahan IF, Kandaswamy D, Srikanth P, Narayana LL, Selvarajan R. Dental unit waterlines disinfection using hypochlorous acid-based disinfectant. *J Conserv Dent.* 2016;19(4):347-350. doi:10.4103/0972-0707.186441

atm plus recommended use at 100 - 200PPM



Eco Utility Systems

atm plus:

DENTISTRY

AS A MOUTHWASH / PLAQUE CONTROL AGENT:

The purpose of this study was to compare the preventive effects of the slightly acidic hypochlorous acid (HOCl) mouthwash and chlorhexidine (CHX) mouthwash as a chemical plaque control agent for oral diseases.



Comparison of O'Leary index. X1: Oral care with 0.9% saline solution (1 min/15ml); X2: Oral care with 0.005% CHX (1min/15 ml); X3: Oral care with slightly acidic HOCl water (1 min/15ml). *Biomedical Research 2018; 29 (8): 1718-1723*

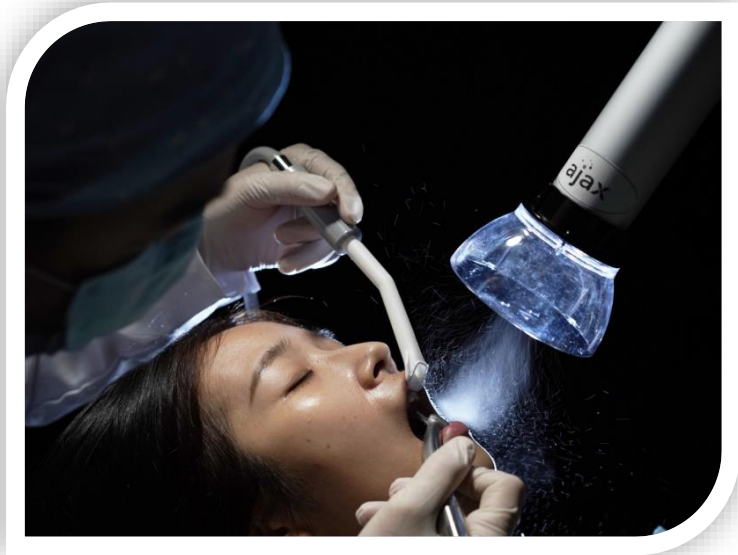
atm plus is non-mutagenic so it won't damage human DNA



atm plus:

DENTISTRY

COLD FOGGING: TO DEFEND AGAINST AEROSOLS



- It carries no electrical charge and is not repelled by germs
- 100% safe, non-irritant, non-corrosive
- Use with ultra-low volume fogging machines
 - Mist over chair and all areas
 - Will dry within a minute
 - Can be used between each patient

'Some disinfectants work by disrupting intermolecular interactions. They can't differentiate between human and microbial cells. HOCl {atm plus} breaks down to prevent this'

atm plus

"the form of free available chlorine that has the highest bactericidal activity against a broad range of microorganisms" (US FDA, 2015)



Eco Utility Systems