

BIO-DECONTAMINATION



BIO-DECONTAMINATION SOLUTIONS

For Rapid, Effective and Flexible Pathogen Elimination

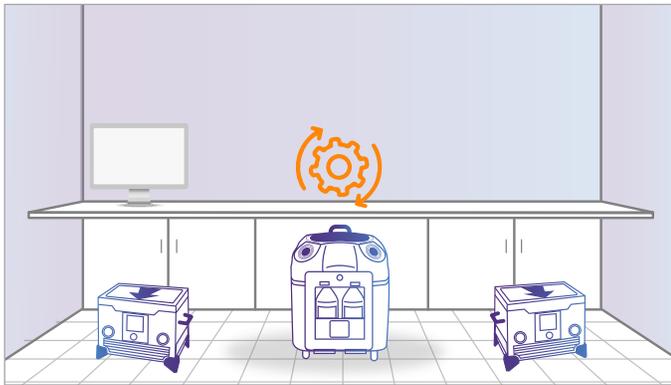
ECOLAB[®]

A Rapid Response to Eliminate Pathogens

HOW BIOQUELL'S 35% HYDROGEN PEROXIDE VAPOR TECHNOLOGY ELIMINATES PATHOGENS

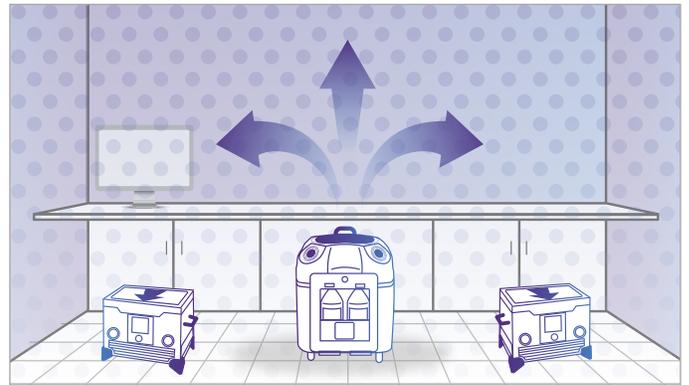
- ▲ Automated hydrogen peroxide vapor biodecontamination equipment is setup in an enclosed space
- ▲ A single cycle is started, killing 99.9999% of pathogens on every exposed surface
- ▲ A broad spectrum of pathogens can be killed, including coronaviruses
- ▲ After recovering the Bioquell equipment, the room is immediately available for use

Bioquell's Hydrogen Peroxide Vapor Process



STEP 1 PREPARATION

The Bioquell decontamination system warms up, getting ready to disperse the vapor. You do not need to reach or wait for temperature or humidity levels to begin.



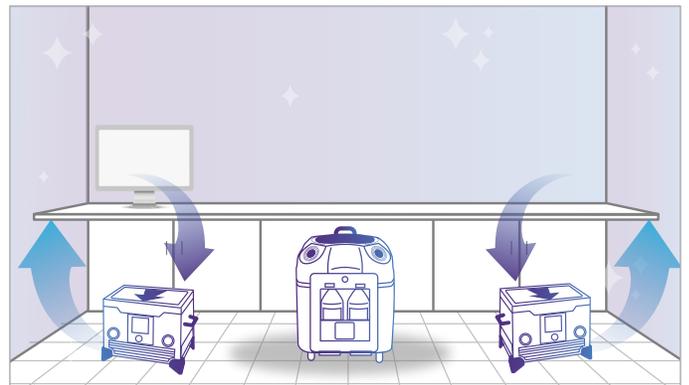
STEP 2 VAPORIZATION

The Bioquell decontamination system emits the vapor into the enclosed area and fills the space, pushing the vapor against every exposed surface, including surrounding complex shapes and crevices.



STEP 3 DWELL

With vaporization complete, the enclosed area is at a standstill, allowing the peroxide to dwell on every exposed surface and kill pathogens.



STEP 4 AERATION

Your HVAC system, high-powered Bioquell aeration units using catalytic conversion or a combination of both safely removes all of the hydrogen peroxide vapor from the enclosed area. When aerated with Bioquell units, the vapor is converted into water vapor and oxygen.

Addressing **Your Needs** with **Our Solutions**

PROVEN EFFICACY

Bioquell has data from over 60 peer-reviewed publications related to its efficacy on a broad spectrum of organisms including bacteria, viruses, spores and more.

Related to the coronaviruses and dangerous diseases, Bioquell has data from a 2014 published study for the inactivation of structurally distinct viruses:

2014 Published Study for the Inactivation of Structurally Distinct Viruses⁵

Feline Calicivirus (FCV)

Human Adenovirus Type 1

Transmissible Gastroenteritis Coronavirus of Pigs (SARS-CoV Surrogate)

Avian Influenza Virus (AIV)

Swine Influenza Virus (SwIV)

Other Related Health Emergencies Involving Bioquell Response

2003 in Singapore to decontaminate SARS infected hospitals

2017 in Mecca as a proactive measure to control MERS-CoV infections during the Hajj

2014 in the US, France and England to decontaminate western hospitals treating Ebola patients

2020 in Singapore hospitals related to COVID-19



WHAT SETS THE BIOQUELL PROCESS APART?

REPEATABLE TRUSTED RESULTS

REACHES DIFFICULT TO CLEAN SPACES

ELIMINATES DOUBT AND RISK OF ADDITIONAL EXPOSURE

USE ANYWHERE IN A FACILITY AND ON SENSITIVE ELECTRONICS

CYCLE IS RESIDUE-FREE

AREA IS AVAILABLE FOR USE IMMEDIATELY AFTER A CYCLE

Deployable in Nearly **Any** Enclosed Space

BIOQUELL TECHNOLOGY IS SCALABLE AND ADAPTABLE TO YOUR NEEDS

The automated process reduces the risk of a contaminant exposure to staff occupying a space, patients if in a healthcare setting, products being manufactured and more.

These include:

- ▲ Small and large rooms
- ▲ Biopharmaceutical production areas & equipment
- ▲ Laboratory equipment
- ▲ Non-critical areas (such as office spaces)
- ▲ High risk or contaminated areas
- ▲ Newly constructed or renovated areas
- ▲ Vehicles and more



HOW BIOQUELL TECHNOLOGY CAN BE USED

Bioquell's Rapid Biodecontamination Service (RBDS)

- ▲ All-inclusive decontamination service coordinated and performed by Bioquell engineers
- ▲ Available for emergency response
- ▲ Scalable to accommodate small or large spaces
- ▲ Verified and validated results with chemical and biological indicators



Bioquell Equipment

- ▲ Automated decontamination systems available for purchase with comprehensive training included
- ▲ Simple setup, and wireless communication for faster cycle times
- ▲ Mobile systems allow for access throughout a facility
- ▲ Integrated and fixed systems available as well
- ▲ Systems such as the **Bioquell BQ-50** (far left) and **Bioquell ProteQ** (left allow facilities to operate their own mobile equipment)

CONTACT US NOW FOR FURTHER INFORMATION ▶

Case Study

COVID-19

ELIMINATING THE PATHOGEN FROM SURFACES IS EXTREMELY IMPORTANT

The **COVID-19 pandemic is fast evolving** and more than 175 countries across the globe continue to see more patients and community spread transmissions.

Initial review of the disease from the World Health Organization (WHO) indicates that COVID-19 has a higher transmission rate than influenza, and other coronaviruses like MERS-CoV.¹ Additionally, a recent NIH study indicates that the virus can survive for days on hard surfaces.²

Eliminating this deadly pathogen from surfaces is extremely important in order to allow operations to resume safely. With the high transmission rate of COVID-19 and its ability to survive on surfaces for days, facilities must work quickly and effectively to clean surfaces and eliminate the pathogen to prevent this virus from further impacting the safety of the staff and key business operations.

COVID-19 AT A SINGAPOREAN HOSPITAL

A private hospital in Singapore cared for one of the **first COVID-19 patients** in the country

The facility needed **a plan** to ensure the **ICU area** hosting the patient was **safe** for staff and future patients to occupy upon patient discharge

After just **two hours** from the start of a Bioquell cycle, the hospital was able to **reopen its ICU**

Bioquell's Rapid Biodecontamination Service (**RBDS**) was selected to perform enhanced disinfection on an as needed contract basis

Bioquell completed **10 separate deployments** in **less than 2 weeks** at this facility



AFTER A TWO HOUR BIOQUELL CYCLE, THE HOSPITAL WAS ABLE TO REOPEN ITS ICU

Bioquell RBDS may be able to **respond immediately** in your region. Visit [bioquell.com](https://www.bioquell.com) for additional details.

Contact Information

BIOQUELL OFFICES

United Kingdom

E: enquiries@bioquell.com

T: +44 (0)1264 835 835

Americas

E: solutions@bioquell.com

T: +1 215 682 0225

France

E: contact@bioquell.fr

T: +33 (0)1 43 78 15 94

Germany

E: Bioquell-dach@bioquell.com

T: +49 (0) 221 168 996 74

Ireland

E: enquiries@bioquell.com

T: +353 (0)61 603 622

China

E: china.service@bioquell.com

T: +86 755 8635 2622

Singapore

E: asiapac.sales@bioquell.com

T: +65 6592 5145

PLEASE SPEAK TO YOUR ACCOUNT MANAGER FOR FURTHER INFORMATION

References

1. Cascella M, Rajnik M, Cuomo A, et al. Features, Evaluation and Treatment Coronavirus (COVID-19) [Updated 2020 Mar 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK554776/>
2. N van Doremalen, et al. Aerosol and surface stability of HCoV-19 (SARS-CoV-2) compared to SARS-CoV-1. *The New England Journal of Medicine*. DOI: 10.1056/NEJMc2004973 (2020).
3. Evaluating the virucidal efficacy of hydrogen peroxide vapor; Goyal, S.M. et al.; *Journal of Hospital Infection*, Volume 86, Issue 4, 255 - 259

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Bioquell Emerging Viral Pathogen Claim: This product qualifies for emerging viral pathogen claims per the EPA's 'Guidance to Registrants: Process for Making Claims Against Emerging Viral Pathogens not on EPA-Registered Disinfectant Labels' when used in accordance with the appropriate use of directions. Contact Bioquell for more details.

WORLDWIDE HEADQUARTER

1 Ecolab Place
St. Paul, MN 55102
USA

www.ecolab.com/lifesciences

