



BIOQUELL HYDROGEN PEROXIDE VAPOR BIO-DECONTAMINATION*

Products and services range



*Using Bioquell Hydrogen Peroxide Sterilant (EPA Registration Number: 72372-1-86703)

About Ecolab

A trusted partner at nearly three million customer locations, Ecolab is the global leader in water, hygiene and infection prevention solutions and services. With annual sales of \$12 billion and more than 50,000 associates, Ecolab delivers comprehensive solutions, data-driven insights and personalized service to advance food safety, maintain clean and safe environments, optimize water and energy use, and improve operational efficiencies and sustainability for customers in the food, healthcare, hospitality, Life Sciences and industrial markets in more than 170 countries around the world.

Our Assurance

Ecolab is committed to providing exceptional service, total plant solutions and unsurpassed industry expertise to help you achieve your business goals.

Our breadth of resources and integrated business model ensure consistency across your operations.

Bio-decontamination Products & Services

- ▲ Isolators with integrated bio-decontamination
- ▲ Mobile room bio-decontamination options
- ▲ Fixed bio-decontamination systems
- ▲ Integrated solutions for pass-through chambers and process equipment
- ▲ Rapid Bio Decontamination Service (RBDS)



A unique range of advanced hydrogen peroxide vapor bio-decontamination equipment and solutions

BIO-DECONTAMINATION

Bioquell Hydrogen Peroxide Sterilant*

Bioquell's proprietary technology uses a 35% hydrogen peroxide aqueous solution to kill microorganisms. Whether for bio-decontaminating equipment or rooms, a single cycle using Bioquell Hydrogen Peroxide Sterilant provides a 6-log sporicidal kill on exposed surfaces.

You can operate Bioquell systems at ambient room temperature and relative humidity, without the need to attain significantly reduced humidity that can be associated with other hydrogen peroxide bio-decontamination systems.

Isolator with **Integrated Bio-decontamination**

Bioquell Qube



GMP



6-log
Sporicidal Kill

The unique isolator integrated with bio-decontamination using Bioquell Hydrogen Peroxide Sterilant*

- ▲ Light, flexible, modular aseptic isolator in convenient configurations
- ▲ ISO 5 / EU Grade A working environment with rapid air clean up and integrated hydrogen peroxide vapor 6-log sporicidal kill bio-decontamination
- ▲ Optional 21 CFR Part 11 audit trail compliance package available
- ▲ Validated bio-decontamination cycles using Bioquell Hydrogen Peroxide Sterilant*

The Bioquell Qube has built-in hydrogen peroxide vapor bio-decontamination technology making it an ideal solution for aseptic processing. With multiple configurations available and a range of options and

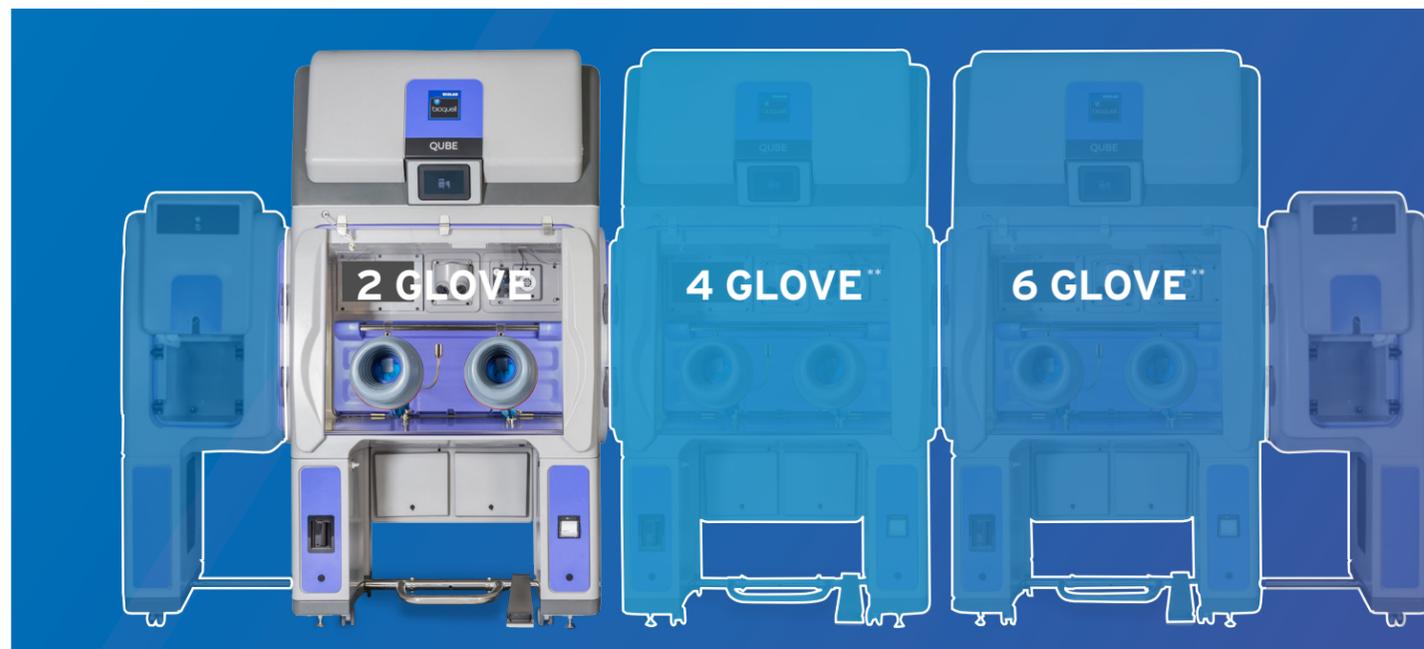


accessories, the Bioquell Qube is suitable for applications such as:

- ▲ Gene and cell therapy
- ▲ Sterility testing
- ▲ Cytotoxics preparation
- ▲ Small batch production (clinical trials, R&D, etc.)

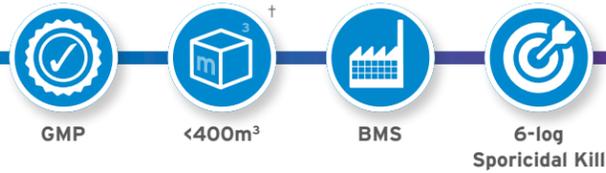


**Retractable inner door required between hydrogen peroxide vapor chamber and any adjacent chambers.



Room | Zone Bio-decontamination

Bioquell ProteQ



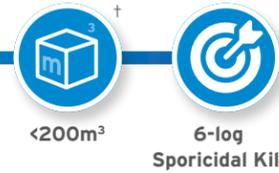
High volume zone bio-decontamination with scalability and mobility

- Advanced distribution and aeration capabilities with wireless communication provide faster setup and cycle times
- 21 CFR Part 11 audit trail compliance package
- Hosts all components within its frame, including additional optional aeration units
- Control a network of 3 systems with one optional master control panel
- Bio-decontamination cycles using Bioquell Hydrogen Peroxide Sterilant*



Bioquell ProteQ

Bioquell BQ-50



Bioquell Hydrogen Peroxide Sterilant* delivered in a portable, easy to use system

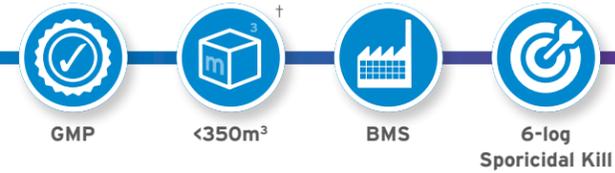
- Mobile, simple to operate, rapid bio-decontamination cycles with intelligent parametric control
- Offers cost-effective bio-decontamination of rooms and laboratories in non-regulated areas
- Bioquell BQ-50 suite includes separate high capacity aeration units
- Bio-decontamination cycles using Bioquell Hydrogen Peroxide Sterilant*



Bioquell BQ-50

Enclosure | Zone Bio-decontamination

Bioquell L-4



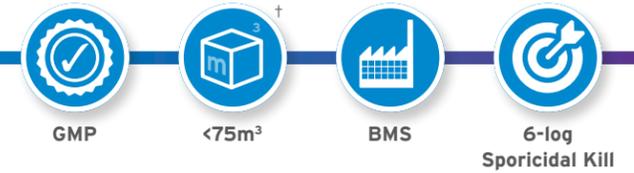
A versatile and mobile system for the bio-decontamination of enclosures, equipment and zones

- Multipurpose mobile generator offers flexibility of use
- Suitable for isolators, enclosures, pass-through chambers, freeze dryers, incubators and rooms
- Easy 'no touch' bottle loading
- 21 CFR Part 11 audit trail compliance package
- Validated bio-decontamination cycles using Bioquell Hydrogen Peroxide Sterilant*



Bioquell L-4

Bioquell IG-2



A fixed, seamless integration of Bioquell Hydrogen Peroxide Sterilant* in to your workflows

- Designed to be built into to process equipment and isolators for a seamless user experience
- Bio-decontaminate equipment such as lyophilizer, filling lines, isolators, incubators, and more
- Bioburden reduction for pass-throughs and airlocks
- Custom and challenging integration applications with the coordination and guidance of Bioquell engineers
- Validated bio-decontamination cycles using Bioquell Hydrogen Peroxide Sterilant*

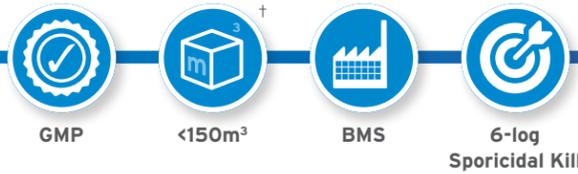


Bioquell IG-2

Pass-through & Airlock Bio-decontamination



Bioquell SeQure



A next generation solution for thorough, compliant bio-decontamination

- Fixed hydrogen peroxide vapor generator for chambers or rooms
- Fast to install and validate (<1 week)
- Validated bio-decontamination cycles using Bioquell Hydrogen Peroxide Sterilant* with optional additional aeration if needed
- Bottle module with peroxide traceability and wastage minimization through the two-bottle module system
- Optional 21 CFR Part 11 audit trail compliance package available



Hydrogen Peroxide Biological Indicators & Chemical Indicators

BIO-DECONTAMINATION

Bioquell Hydrogen Peroxide Sterilant*

- 15 month shelf-life; traceable
- EPA registered sterilant (EPA Registration Number: 72372-1-86703)



Bioquell Biological Indicators

- Consistent, reliable and independently tested
- 6-log *Geobacillus stearothermophilus* biological indicators
- Developed to validate hydrogen peroxide vapor technology

Bioquell Chemical Indicators

- Two specially formulated options for rooms and for isolators / small enclosures

Bioquell Rapid Bio Decontamination Service (RBDS)



Bioquell RBDS



GMP
6-log
Sporocidal Kill
Scalable

Rapid Bio Decontamination Service (RBDS) For Pharmaceutical, Life Sciences & Healthcare

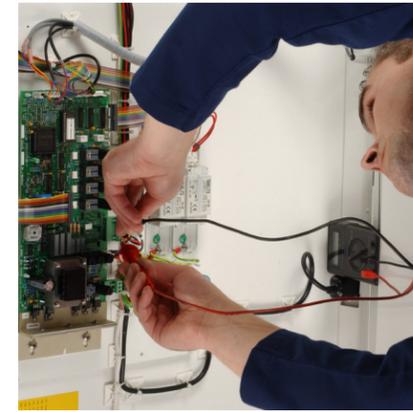
- ▲ Planned, proactive or rapid emergency deployment based on client operations
- ▲ Dedicated response options to host Bioquell equipment onsite in critical areas for rapid emergency deployment
- ▲ Single room/lab to whole facility bio-decontamination to fit client requirements
- ▲ Bio-decontamination of biological safety cabinets, incubators, robotic enclosures and other laboratory based equipment
- ▲ 6-log sporicidal kill using Bioquell Hydrogen Peroxide Sterilant*
- ▲ Fully managed process, from site survey through to final bio-decontamination report, with no capital equipment expenditure required

APPLICATIONS:

- ▲ Bioprocessing, biomanufacturing and production zones
- ▲ Biosafety labs of all levels
- ▲ Cleanrooms and research labs
- ▲ Post-construction new-area commissioning
- ▲ Shutdown, end of campaign and facility restart periods
- ▲ Emergency response
- ▲ Dedicated response plans
- ▲ Equipment bio-decontamination needs (BSC, lyophilizer and more)

Other Services

BIO-DECONTAMINATION



ECOLAB SERVICES

Installation & Commissioning

To get the most from your Bioquell bio-decontamination equipment, it must be correctly installed and configured. Depending on your application, this may not be a straightforward process, and our highly trained engineers are able to take you from a new, boxed unit to a fully functional and compliant set-up, ready for you to use, regardless of the complexity of your system.

Maintenance & Calibration

Bioquell's experienced field service engineers can check, change and calibrate your bio-decontamination equipment, ensuring it remains in excellent condition. Whether it is breakdown cover for business / process critical systems or annual service and maintenance plans, the Ecolab team is able to tailor a service to suit you.

Material Compatibility Testing

Ecolab offers a testing service to determine the compatibility of materials and components with Ecolab's Bioquell bio-decontamination systems. We also offer a hydrogen peroxide ingress testing service for clients who are concerned about hydrogen peroxide permeating into sensitive materials such as bags, vials, and syringes being loaded into isolators and material airlocks.

Training & Support

To ensure longevity and efficient operation of your system, it is essential to start with a solid knowledge base. Using a combination of practical exercises, face-to-face training and a comprehensive e-learning system, we are able to 'transfer knowledge' through the medium which suits you. And once the training has been completed, our technical support team will continue to help you with any questions.



GMP

VALIDATING BIOQUELL EQUIPMENT

- ▲ Professional validation of Ecolab's Bioquell Hydrogen Peroxide Sterilant bio-decontamination process within the client environment includes the provision of regulatory compliance paperwork
- ▲ Installation and operational qualification (IQ/OQ), Gas Cycle Development (GCD) and Performance Qualification (PQ) are performed to ensure equipment is operational within required timelines
- ▲ Rapid and efficient hydrogen peroxide vapor cycle development to fit client process to provide a robust bio-decontamination cycle which achieves 6-log sporicidal kill using Bioquell Hydrogen Peroxide Sterilant* in the shortest amount of time
- ▲ We provide you with documentation to satisfy your regulatory requirements, from airflow checks and particle counts to full bio-decontamination cycle development

OUR ASSURANCE

Ecolab is committed to providing exceptional service, total facility solutions and unsurpassed industry expertise to help you achieve your business goals.

Our breadth of resources and integrated business model ensure consistency across your operations. We look forward to the opportunity to partner with you on your transformation journey.

PLEASE SPEAK TO YOUR ECOLAB ACCOUNT MANAGER FOR FURTHER INFORMATION

USE BIOQUELL PRODUCTS SAFELY. ALWAYS READ THE LABEL AND PRODUCT INFORMATION BEFORE USE.

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