What makes the Bioquell QUBE uniquely advantageous for aseptic pharmacy processing?

The Bioquell QUBE is not a product, it is a complete solution, developed following extensive feedback from pharmacy professionals to provide an efficient and optimised environment for the safe preparation of individual patient prescriptions.

Safe, aseptic prescription preparation environment, the Bioquell QUBE puts patient safety at the forefront with fully integrated HEPA filtered air, hydrogen peroxide vapour surface bio-decontamination technology (already extensively used by biopharmaceutical groups world-wide) and environmental monitoring.

Ergonomically designed to create an attractive work environment for pharmacy professionals. Novel manufacturing technologies allow a cost-effective, modular system enabling the Bioquell QUBE to be configured for each pharmacy on a case-by-case basis.

Engineered for rapid deployment in the pharmacy, including validation and compliance (eg. ISO 5 / Grade A and USP797 / USP1116).

Fully integrated environmental monitoring solutions, including continuous, total particulate and viable monitoring systems, are available as pre-engineered options to help meet regulatory reporting requirements.

Operates in positive or negative pressure mode, with rapid configuration to meet the requirements of the prescription mix.

Utilises high quality hydrogen peroxide solution, formulated for optimised Bioquell HPV performance: repeatable, reliable, effective residue-free surface disinfection.

Ideal solution for satellite pharmacy units requiring prescription preparation including ICU, HDU, OR, oncology or haematology.

Specialist consultancy support available to optimise the integration of the Bioquell QUBE system into each pharmacy's SOPs.

Substantial cost savings are available from using an aseptic prescription preparation environment due to the possibility of significantly extending Beyond Use Dates (BUD), increasing throughput and lowering labour requirements.

Bioquell | **QUBE** for the pharmacy

- Helps improve patient safety by reducing microbial contamination
- Improves process flows
- Increases throughput
- Enhances regulatory compliance
- Helps extend Beyond Use Dates (BUD)
- Reduces labour requirements

- Safe drug preparation environment
- Small footprint
- Ergonomic design
- Rapid decontamination cycles
- Flexible, modular configuration
- Ideal for hospital, compounding and satellite pharmacies

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Bioquell | **QUBE**

New, innovative individual patient prescription preparation solution

The Bioquell QUBE has been designed for hospital and compounding pharmacies to provide a secure aseptic processing environment to prepare individual patient prescriptions safely, rapidly and cost-effectively. It is a complete solution, ergonomically designed with a flexible configuration.

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Bioquell | **QUBE**

Rapid, safe preparation of individual patient prescriptions

The Bioquell QUBE is a secure, ergonomically designed solution for the safe, rapid and cost-effective preparation of high volumes of complex prescriptions.

Hydrogen peroxide vapour (HPV) gassing module
Rapid residue-free surface disinfection of preparation environment, including precursor components.

Work area extension module
Space to prepare individual patient prescriptions under aseptic conditions.

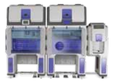
Material transfer / pass-out module
Rapid and secure pass-out of individual patient prescriptions.

Flexible, customised Bioquell QUBE configurations with additional process accessories*

Select the optimal Bioquell QUBE configuration and accessories to give you the best solution for your pharmacy. Flexible funding structures include purchase or rental options.

Bioquell QUBE HPV module - surface bio-decontamination chamber for hospital, compounding and satellite pharmacy applications.

Bioquell QUBE HPV module plus material transfer module - to facilitate rapid, secure pass-out of the final product.



Bioquell QUBE HPV module plus extension module and material transfer module - to provide additional space to allow preparation of individual patient prescriptions.

Larger configurations available for more complex and higher volume applications.

*Some components of the Bioquell QUBE system may not be available at launch but will be released in due course.

Schematic of typical pharmacy process flows

Hospital Pharmacy

Bioquell QUBE pharmacy critical compounding environment
designed to protect patients from infection risks due to contaminated prescriptions

The Bioquell QUBE offers the latest hydrogen peroxide vapour (HPV) bio-decontamination technology built within an ISO 5 / Grade A HEPA filtered biological control workstation. This system provides a high-level reduction in microorganisms during precursor entry to help maintain a high quality aseptic environment for the preparation of patient prescriptions.

Physician writes prescription (Rx)

The physician prescribes a complex drug/treatment (e.g. cytotoxic, MAB, ABX, TPN, CIVAs) for the patient and completes an individual patient prescription form. This is then passed to the hospital or compounding pharmacy for immediate preparation.

Rx generates worksheet which is used to assemble precursors

The worksheet provides a list of all the precursors required and these are loaded into specially designed individual patient prescription towers. These towers, which comprise an integral part of the Bioquell QUBE design, optimise the surface bio-decontamination of the product precursors, while keeping each prescription separate. This approach helps to avoid mix-ups using open trays and subsequent prescription errors.

Surface disinfection of Rx precursors and the aseptic working environment

Using the in-built HPV bio-decontamination system during precursor entry, a reduction in bioburden is indicated using Bioquell's colour-changing chemical indicators (Bioquell HPV-CI). These provide an immediate visible indication that surface bio-decontamination has occurred during each loading. At the same time, biological indicators designed specifically for Bioquell's HPV surface bio-decontamination process (Bioquell HPV-BI) can also be used to provide a validation of the 6-log reduction in bioburden for regulatory purposes.

Drugs prepared in conditions that meet ISO 5 / Grade A compliance

After loading, the prescription preparation begins in an aseptic environment. Using each prescription tower in turn, individual patient prescriptions can be prepared. During this preparation, the environmental conditions are measured using a range of optional pre-engineered and fully integrated monitoring technologies (continuous, total particulate and viable), providing data for regulatory requirements and patient protection assurance.

Final product release via material transfer / pass-out module

After preparing each prescription, individual towers can be immediately transferred into the specially designed material transfer / pass-out module. After sealing off the working area, pressure cascade HEPA filtered air curtains help to ensure that bio-contamination does not enter the critical compounding environment as the individual prescription tower is removed.

Checking of final product

At the end of the preparation process, the worksheet, which has stayed with the prescription tower throughout its journey, can be used to check the final product before dispatch to the patient. By keeping all the prescription precursors in one place in the individual patient prescription tower, the discarded material and final prescription can be checked to confirm that no prescription compounding error or precursor mix-up has occurred.

Rx administered to patient

Finally, on the ward, the correct patient prescription is administered to the right patient in full knowledge that all possible steps have been taken to eliminate biological contamination and prescription error. A full regulatory compliance trail is available at the pharmacy that can demonstrate appropriate diligence and care at all times.

Protecting patients from risk

Protecting patients from risk is an essential part of every drug compounding process. The Bioquell QUBE system has been designed to provide a robust critical compounding environment with bio-decontamination control and bio-contamination monitoring to help prevent harm to patients from infection. In addition, the individual patient prescription towers help eliminate the risk of patient prescription errors while increasing throughput and efficiency.