

Bioquell QUBE – Aseptic pharmacy workstation Drug compounding with HPV decontamination



- **Intelligent modular design for flexibility in pharmacy aseptic services**
- **Rapid high level 6-log sporicidal reduction for improved bio-contamination control**
- **Compliant with GMP Grade A - Annex 1**

Fully integrated modular workstation for aseptic pharmacy applications

Healthcare professionals are looking increasingly towards the ‘in-house’ hospital pharmacy team to prepare personalised medication for patients. As this aseptic production process develops, bio-contamination control is essential in order to reduce the risk to patients. Traditional disinfection methods rely on a manual spray and wipe process using alcohols or other cleaning wipes. These processes can compromise the bio-decontamination control due to a number of factors; such as cleaning agent contact time, incomplete coverage of exposed areas and ineffectiveness against some biological material (e.g. spores). Failure rates of 3-4% from finger dab contamination assessments are not uncommon, despite the widespread use of alcohol decontamination methods.¹ Each failure will involve lengthy investigations and may result in the scrapping of costly batches of product.

To meet the challenges seen in aseptic processing, Bioquell has developed a fully integrated hydrogen peroxide vapour (HPV) modular workstation, the Bioquell QUBE. It offers a rapid, validated 6-log sporicidal decontamination capability that maintains an EU Grade A/ISO 5 quality environment. This HPV technology has been shown to reduce finger dab contamination assessment failure rates to less than 0.1%.¹

The Bioquell QUBE also offers 3 different levels of integrated environmental monitoring including viable and continuous particle monitoring to ensure continued patient safety.

Closed barrier technology

The intelligent, modular design of the Bioquell QUBE provides flexibility for the user to configure the system to fit a number of different processes including batch production and individual patient prescriptions. Separate 2-glove modules can be combined to give a system which best suits to the users current process requirements but can be easily expanded to meet future needs. The closed barrier technology also allows the user to apply HPV bio-decontamination in one module whilst aseptic processing is carried out in another.



Individual patient prescriptions can be housed in the Bioquell prescription separation system

Prescription compounding

Along with biological contamination, another major risk to patient safety in the compounding process is prescription error. To help manage this risk, Bioquell has developed a unique prescription separation system. Each system can carry an individual patient prescription and the associated worksheet. Several systems can then be presented in the chamber for compounding. By holding each patient prescription separately, this reduces the risk of mix up. The system has been optimised for use with HPV by minimising the contact area of the components within the system whilst allowing for ideal vapour distribution. The use of this system helps the user to increase throughput whilst ensuring continued patient safety.

The user has the option to attach a Bioquell HPV-CI (hydrogen peroxide vapour chemical indicator) to each system. Under successful HPV bio-decontamination conditions, the Bioquell HPV-CI shows a colour change. Bioquell HPV-CI cards can be individually annotated and attached to the worksheet for future reference. This provides a record that prescription components have been exposed to HPV bio-decontamination conditions.*

The internal working area of the Bioquell QUBE incorporates a number of features to maximise the space available for the pharmacy technician to carry out their manipulations. A shelf allows storage of components not in immediate use and a rail can be used to hang IV (intra-venous) or TPN (total parenteral nutrition) bags making them easier to operate in the compounding process. An optional tri-clover fitting and internal electrical connections within the chamber, allow the incorporation of devices such as syringe pumps, offering greater optimisation in order to meet compound requirements.

Bioquell QUBE system configurations for pharmacy aseptic services applications

The Bioquell QUBE is a modular system that allows a variety of configurations in order to best suit your application.



Image 1. Single integrated HPV gassing module, with front opening door for loading and unloading all prescription, EM (environmental monitoring) samples and waste materials.



Image 2. Integrated HPV gassing module, with front opening door for loading and unloading prepared prescriptions, EM samples and waste.



Image 3. Integrated HPV gassing module plus one 2-glove workstation and materials transfer module. The 2-glove workstation and material transfer module can be installed to the left or right of the HPV gassing module.



Image 4. Integrated HPV gassing module plus two interconnected 2-glove workstations and a materials transfer module. 2-glove workstations and 2 material gassing modules can be installed to the left or right of the HPV gassing module.

1. Oldcome M. Considerations for an ideal hospital aseptic pharmacy. *Hospital Pharmacy Europe* 2012; 64: 45-47.

* Note: Ongoing exposure to the air can cause the indicators on the Bioquell HPV-CI card to continue fading.

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