

Materials Compatibility in Hospitals

Compatibility testing

Prior to releasing the Room Bio-Decontamination Service (RBDS), BIOQUELL performed extensive material compatibility testing, with a particular focus on electronic equipment. The test equipment was subjected to 860 gassing cycles, whilst disconnected, and the same number whilst operational. No faults or deterioration were reported as a result of the cycles. The equipment has been used without related problems for over two years since the testing was completed. For methodology and results of these tests, and all other material compatibility tests, please refer to BIOQUELL's "Hydrogen Peroxide Vapour. Material Compatibility: Issues and facts".

The Theory

BIOQUELL's rapid, residue-free Room Bio-decontamination Service (RBDS) utilises the microbicidal power of free radicals released by Hydrogen Peroxide Vapour (HPV) to fumigate rooms. The RBDS equipment first distributes HPV throughout the area, ensuring all surfaces are decontaminated, before converting the vapour to oxygen and water vapour.



The invisible micro-condensation exists for a short time and evaporates during the aeration phase of the cycle, leaving no residue. This short contact time is the reason that BIOQUELL's RBDS shows excellent material compatibility.

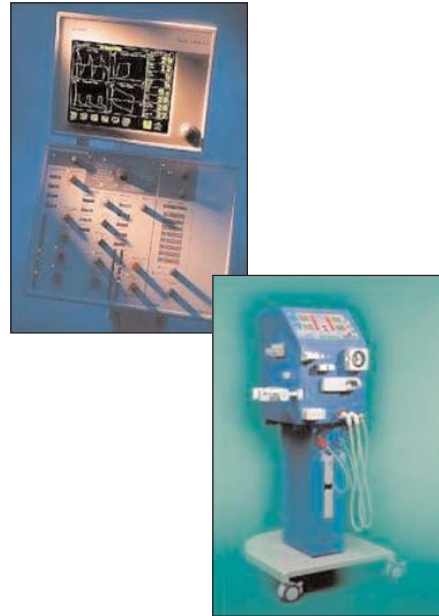
Major hospital contract

During the SARS epidemic, BIOQUELL secured a contract to fumigate three hospitals, each of which were furnished with sensitive, high-tech equipment. The client, Parkway group, the largest healthcare supplier in Singapore, was understandably nervous about the HPV potentially affecting their machinery. Having examined the methodology and results of the testing programme, however, they agreed to leave all the medical equipment in place, therefore ensuring complete internal and external decontamination. At the time of writing, RBDS has had over 3,500 deployments in hospitals around the world.

This approach proved extremely beneficial, preventing potentially contaminated equipment re-contaminating the areas post RBDS, and saving time which would otherwise have been wasted removing, decontaminating and replacing the equipment.

The following equipment was decontaminated during the project:

- Siemens Servo 300C and 900C Ventilators
- Siemens Patient Monitors, System 9000
- PICIS Clinical Information System
- Planet LCD panels
- Tyco Puritan Bennett 800 Ventilator
- Baxtor Continuous Cardiac Output
- Terumo Infusion pumps
- Hewlett Packard (now Philips) Defibrillators
- Gambro Dialysis Machines
- Dinamap NIBP
- Hanau Operating Theatre Lights and controls
- Hewlett Packard Patient Monitors
- Grassby Infusion pumps
- Hillrom ICU and Electric Beds
- Seca Weighing scales
- Gomco Thoracic Suctions
- Welch Allyn laryngoscopes and diagnostic sets
- Hillrom Flatwalls and Flat Panels



Results

Thermal Group, the company responsible for supplying Parkway with all their medical equipment, conducted a thorough examination of all the instruments which had been exposed to RBDS cycles. The equipment was first examined immediately after decontamination. No signs of malfunction or deterioration of any form were found. Three months later another exhaustive examination was made, with the same end result. Constant contact has been kept with Parkway group since the contract. There has been no reported equipment deterioration as a result of the RBDS cycles, nor has there been any trace of related malfunction.

Our extensive testing programme, together with the continuing experience we are gaining in the field gives BIOQUELL great confidence in performing RBDS around the high-tech machinery found in hospitals.

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