zher**ox**®

Pushing the boundaries of biodecontamination

aminstruments®

zherox®

PATENTED

A complete line for environmental and surface biodecontamination with innovative HPE technology.

Zherox® b-pack

Zherox®

HPE TECHNOLOGY

A <8% hydrogen peroxide solution is diffused through a nozzle, creating a mist of micro-droplets which are ionised when they pass through a high-voltage electromagnetic field.

The resulting solution has a high concentration of hydroxyl radicals and ROS (reactive oxygen species) which are able to cause damage to microorganisms by the oxidation of proteins, carbohydrates and fats.

The electromagnetic field generates an electrostatic charge in the mist which thereby acts as a gas due to the mutually repulsive action of positive charges.
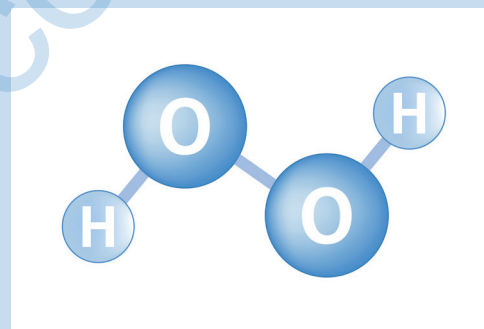
The result is a high rate of solution dispersal able to cover 100% of the area to be treated.

The resulting products, oxygen and water, leave no residue on surfaces.
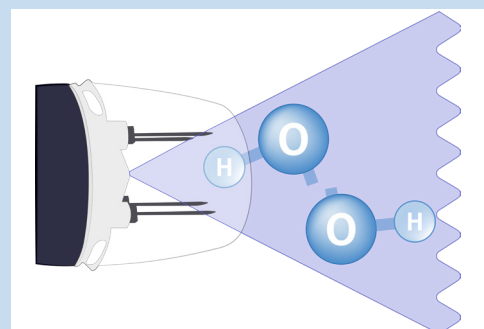
APPLICATIONS

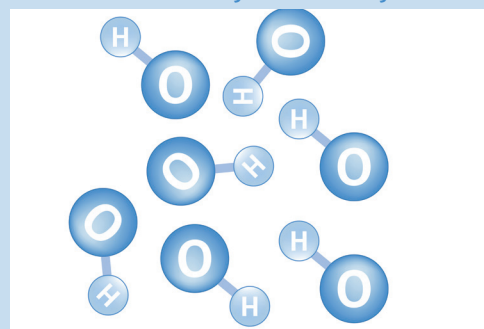The different systems can be used in the following applications:
• pharmaceutical industry
• research and laboratories
• biotech
• hospitals and healthcare
• offices
• transport

Zherox® Light

amtech®
by AM Instruments

Hydrogen peroxide ‹ 8%

Ionisation and diffusion thanks to a high voltage electromagnetic field

Mist of micro-droplets of hydroxyl radicals

ZHEROX®

Zherox® is the new environmental decontamination mobile system designed and built to fully comply with GMP requirements.

proven EFFICACY

unparalleled COMPATIBILITY

innovative TECHNOLOGY

shorter CYCLE TIMES

maximum AUTOMATION

data INTEGRITY

zherox

amtech®
by AM Instruments

A NEW CONCEPT OF BIODECONTAMINATION

- electromagnetic hydrogen peroxide ionisation technology
- solution based on H_2O_2 <8%
- optimised diffusion
- shorter cycle times
- remote control
- no ventilation necessary for optimum diffusion
- maximum material compatibility
- settings memory and combination
- fully ergonomic
- user-friendly touch screen
- predictive maintenance
- time synchronisation with NTP (network time protocol) technology
- full traceability
- cloud-based data available anywhere, any time
- immediate GMP report generation
- compliance with directive CFR21 part 11

AM CLOUD

With AM Cloud, Zherox® is available anywhere, any time.
Take out the plan which best meets your requirements to access
all the data on the biodecontamination
equipment and operations.

Zherox® is a cloud-based system: each unit requires the creation of remote server space.
The client is provided with an advanced maintenance system and regular updates.

ADVANCED MAINTENANCE

With AM Cloud, you can monitor the state of each individual unit and be notified in real time of pending maintenance.

In addition, the new integrated diagnostics system facilitates rapid intervention and convenient alerts on your smart phone.

With AM Cloud, an advanced predictive system which drastically reduces interventions and enables programmable maintenance, Zherox® reduces maintenance times and the unpredictability of maintenance interventions.
Maintenance plans are available in line with the customer's requirements, as set out in the dedicated server rental contract.

zherox®

EFFECTIVENESS
The biodecontamination effectiveness of the solution and its improved distribution are guaranteed by the action of a source of ionising energy consisting of an electromagnetic field able to increase the oxidising efficiency of the solution by 50%.

OPTIMISED DIFFUSION
Optimised distribution of the solution in the space. The positively charged micro-droplets repel one another, dispersing the solution as if it were a gas. It is not necessary to use ventilators to optimise diffusion.

SPEED
The system is capable of sanitising up to 300 cubic metres with a single unit. In larger areas it is possible to use several units at the same time, interconnected by Wi-Fi and managed as a single system, permitting optimised dispersal of the mist and reducing cycle times. No ambient conditioning of the premises is necessary.

MATERIAL COMPATIBILITY AND SAFETY
Maximum material compatibility: the solution used has a concentration 4 times lower (<8%) than VHP systems (35%) and has no hazard rating, is not explosive and is not flammable or corrosive.

MAXIMUM AUTOMATION
The biodecontamination cycle settings can be stored in memory and retrieved. The cycle can be started from the integrated touch screen or by connecting to the Zherox® Wi-Fi network, via any mobile or fixed device, thanks to the presence of a web server on the machine. The coverage of the Zherox® Wi-Fi network can be expanded through the Wi-Fi extender kit. Maximum automation of activities.

GMP REPORT
The system ensures that biodecontamination operations are fully traceable: insertion or modification of operating parameters, configuration, maintenance, users, data on the sanitiser used.
All operations are stored in memory and are available to consult or for report generation. All data is present and accessible on the cloud for consulting and reporting purposes.

SANITISER MONITORING
Zherox® can be fitted with a 5 L tank of sanitiser with full data monitoring at all times.

REAL-TIME CONTROL
The machine senses the solution parameters, making them remotely available in real time. The quantity of liquid delivered is controlled at all times during biodecontamination operations. It is possible to continuously monitor relative humidity, temperature and the peroxide concentration.

DATA INTEGRITY
The machine ensures data integrity in accordance with ALCOA principles. All data is attributable, legible, contemporary, original and accurate.

EASY TO USE

REAL-TIME CONNECTION

Zherox® introduces a new biodecontamination concept, simplifying the process from initial set-up to the drafting of the final report.

The easy-to-use interface guides the user clearly during the key steps of the biodecontamination activity.
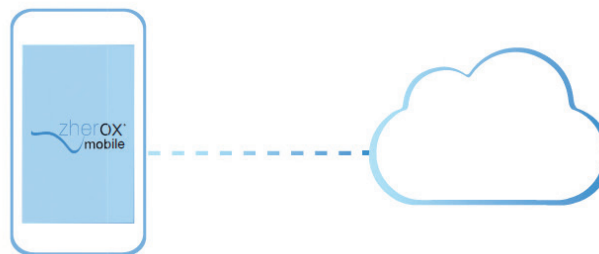
NO NEED FOR ROOM CONDITIONING.

Zherox® "pocket-sized": you can connect to the Zherox® system straight from your Android or iOS smart phone. Logging in from your device gives you access to the Zherox® environment including machine status, reports and operating history, all in accordance with data integrity principles.

Zherox®'s key strength is its connectivity: communication with the cloud-based servers is through the operator's smartphone. The smartphone is a key component in the system: being connected at all times, it provides a bridge between units and servers, ensuring reliable and consistent synchronisation and improving user experience.

It is necessary to use a smartphone or tablet equipped with a SIM card to ensure connectivity to the Internet.

TEAM ZHEROX® IN ACTION

For the biodecontamination of large areas, it is possible to further boost the effectiveness and efficiency of the process by using several interconnected machines. Increasing the diffusion points reduces cycle times and improves the dispersal of sanitiser in the premises.

To ensure data completeness and simplicity of use and to minimise the possibility of operator error in the management of more than one unit, the devices connect by Wi-Fi, automatically synchronising with one another.

Once the cycle permitting the use of more than one unit has been set up, the machines will start up together to complete the programmed cycle.

All information as well as the list of machines and the solution batches used will be delivered in the final report.

DISPLAY & REPORT

DATA INTEGRITY

DISPLAY

The 7" touch screen has a user-friendly graphic interface permitting the following actions:
• initial configuration/retrieval of existing programme settings
• maintenance and diagnostic processes
• local user input
• monitoring of operating parameters
• consulting of data

All the operations mentioned can also be managed remotely, within the Zherox® Wi-Fi coverage.

REPORTS

The report contains the following:
• company name and logo
• data and time
• credentials of the operator executing the cycle
• batch and expiry date of the sanitiser used
• cycle parameters: name of premises and cubic meterage/mL delivered/delivery time/contact time
• sanitisation result (presence or absence of anomalies)
• value in ppm peroxide+T+RH% read from the sensor (optional) at the end of gassing
• printout date and time
• credentials of the person making the printout
• approval signature field

At the end of the operation, it is possible to activate a flag on the machine to automatically generate the report on the decontamination just completed.

ACCESS

Registration of operators:
• username as the unique ID
• name
• surname
• alphanumeric password
• role
Depending on the hierarchical role, specific functionalities may be available

ALCOA

The machine guarantees data integrity in accordance with the ALCOA principle.
The data provided by Zherox® are in fact:
• A/Attributable: each data is associated with the person and/or activity that generated it. The cycles, as well as the ordinary and extraordinary maintenance operations and the loading of the consumable product into the machine, are recorded and attributed to the operator responsible
• L/Legible: the data is legible and permanent. No data is encrypted or coded in order to allow the clearest usability
• C/Contemporary: the recording of the data is contextual to the event that generates it through a unique "time stamp", and is immediately verifiable
• O/Original: the data is original and validated, without any possibility of modification
• A/Accurate: the data adheres strictl to the activities and actions carried out.

ZHEROX® LIGHT

Zherox® Light is a stand alone machine capable of biodecontaminating areas up to 300 m³.
Through the touch display it is possible to manage biodecontamination operations and routine and extraordinary maintenance.
The AM GMPREP app allows you to generate GMP reports.

FUNCTIONALITY

- generation of a known volume of sanitising solution
- verification of the presence of the tank and the minimum quantity necessary to perform the activity
- real-time monitoring of the parameters necessary for proper nebulisation, functional to the activity in progress (liquid flow and air pressure)
- status communication through visual signals (display, LED ring)
- GMP report generation via AM GMPREP app

CYCLE

The execution of a cycle must start from one of the following inputs:

- insertion of the dimensional data of the room to be treated and automatic calculation of the quantity of solution to be generated
- direct entry of the quantity of solution to be generated
- the management of biodecontamination operations, operational/functional parameters as well as ordinary and extraordinary maintenance of the machine can be performed using the 7" touch display on board

REPORT

- each machine is independent and able to generate GMP reports through the dedicated AM GMPREP app
- the reports are recorded on the internal memory of the machine with the possibility of downloading the documentation on a USB key

Zherox® b-pack is the new portable biodecontamination system by AM Instruments.

The innovative HPE technology of Zherox® applied to a lightweight system, allowing maximum operational simplicity, complete safety for the operator, and proven effectiveness.

NEW MODEL, NEW FEATURES

EFFICACY

SAFETY

SPEED

PORTABILITY

EASY BOTTLE STORAGE
QUICK CONNECTION
CONSTANT MONITORING
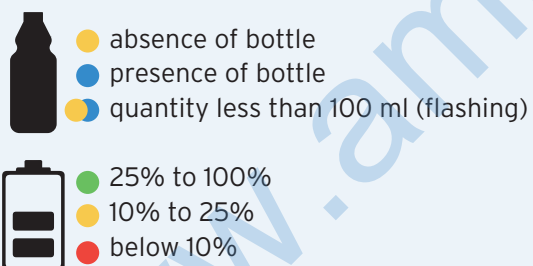**OF THE SANITASING SOLUTION**

THE DEVICE

Zherox® b-pack is a battery-powered portable device for the biodecontamination of surfaces.
The new light and small-size model offers new features, such as:
- ergonomic backrest
- padded shoulder straps with chest strap for better weight distribution
- top handle for easy carrying and handling of the system
- external machine parts made of HDPE to protect from high wear, abrasion, and impacts and warrant high chemical resistance
- electronic components protected from accidental contact with spilled liquids
- possible shocks absorbed by the machine's hollow plastics
- quick connections for easy cable removal during storage and quick diffuser replacement
- dedicated diffuser and battery carrying case for easy transport and storage
- slide-out battery with quick connection
- light and sound signals of operating status and battery level
- bottle insertion in dedicated space and connection via quick connection
- RFID reader for identification sanitiser used

- absence of bottle
- presence of bottle
- quantity less than 100 ml (flashing)

- 25% to 100%
- 10% to 25%
- below 10%

STATUS LEDS RELATED TO SANITISER AND BATTERY LEVEL

SELF-DIAGNOSTIC ALERT

03-059-22 Rev. 02

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