DDHP
DECONTAMINATION
SERVICES

Gaia Science

Gaia Science (M) Sdn Bhd
A member of Gaia One International
No 60, Jalan Puteri 5/5, Bandar Puteri, 47100 Puchong, Selangor, Malaysia
Tel: +603-8065 3889 Fax: +603-8065 3989
Email: info@gaiascience.com.my Web: www.gaiascience.com.my
Company No: 873470-D
SST No: B16-1808-31028773

Why Do You Need Sterilization?

Places like laboratories, Biosafety Level 3 (BSL-3) facilities, Good Manufacturing Practice (GMP) facilities, animal breeding facilities and production rooms where aseptic preparation are handles requires clean and sterile environment in their daily production. Meanwhile place like healthcare facilities and hospital where the places are prone to secondary infections and viral transmission also requires sterilization.

What is Sterilization?

Sterilization is a process to destroy any living form on or in an object which includes bacteria, viruses, spores and fungi. From a microbiological point of view, a substance is sterile when it is free from any form of living organism. However, it is not possible to achieve free form of microorganism but is possible to reduce to low number. Since the nature of microbial death is described by exponential function, therefore a sterilization is achieved through reduction of spore population of six log reduction (10-^{6}).

Type of Sterilization

Sanitation

A process of removal dirt and other soils without killing microorganisms or spores through chemicals such as detergent which usually achieve two log reduction (10^{-2})

Disinfection

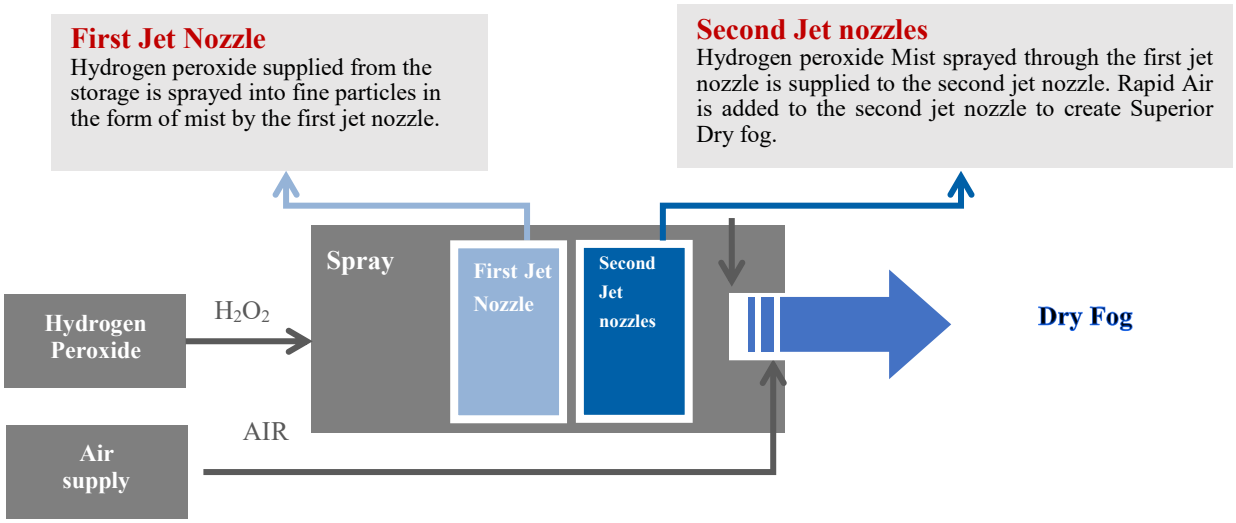
A process that can destruct pathogenic microorganism but not bacterial spore which usually achieve five log reduction (10^{-5})

Sterilization

A process that can destroy all microbial living including spore and achieve six log reduction (10^{-6})

Why DDHP Decontamination?

We use **D**ouble Jet Nozzle **Dr**y Fog **H**ydrogen **P**eroxide (**DDHP**) Technology that produce finer particles in the form of Superior Dry fog. As the finer the particles which is less than 1 μm, are less affected by gravity. Therefore, the lightweight particles allow wider sterilization space and shorter time.



Is DDHP Decontamination Safe?

Yes, it is safe. We use a superior, safe and environmentally friendly solution of hydrogen peroxide (H_2O_2) with concentration as low as 7.5%. With the low concentration H_2O_2 solution, it allows short ventilation time and subsequently a fast decontamination cycle. The low concentration H_2O_2 solution also safe to any time of surface material such as ABS, PVC, stainless steel, rubber, epoxy, cotton, nylon, wood etc. allowing the decontamination of the room can be done together with the equipment and furniture in the room without worrying damaging the equipment or the furniture. Moreover, our technical team will monitor the room H_2O_2 concentration level with H2O2 meter to ensure the concentration reach the safety level before allowing user to enter.

How to Validate if The DDHP Decontamination is Effective? (Optional)

For each room decontamination, we will set up the biological indicator (BI) using Bacillus stearothermophilus, a type of bacteria strain that is most resistant to sterilization. The BI is then place at the most difficult to reach area in the room and then is collected during the end of room decontamination before sending it to accredited laboratory for confirmation of sterilization. Using this strain will be the most reliable way to validate the room decontamination efficiency.

What is The Process of DDHP Decontamination?

When the DHHP is placed in the room, our technician will program the recipe for the room decontamination according to the room size. The room was then properly sealed to avoid leakage through the window, door or AHU.
Once the room is sealed, the DHHP unit will then inject Superior Dry Fog to fill in the room and allow the fog to stay in the room to certain period before aeration start for H_2O_2 removal to safe concentration at 1 ppm.

How long Decontamination Cycle takes?

It is very much dependent on the room size.
As the room size will define how long and how much H_2O_2 solution is needed to be injected into the room. Therefore, the cycle time varies according to room size.

What are the differences between DDHP with available decontamination service?

The summary of differences between the available decontamination services:

Features	DDHP	VHP®	Formaldehyde	Chlorine Dioxide
Independence from temperature and humidity	✓	✗	✗	✗
Short cycle & Aeration time	✓	✗	✗	✗
Material compatibility	✓	✓	✗	✗
Ability to spread	✓	✗	✓	✓
Easy to use and handling	✓	✓	✗	✗
Superior sterilization ability	✓	✓	✓	✓
Noncarcinogenic	✓	✓	✗	✓
Easy finishing	✓	✓	✗	✓
Eco-friendly	✓	✓	✗	✓

For more information, please call us at 012-380 5733 or write in to us at info@gaiascience.com.my