



VON GAHLEN

# AUTOMATED HOT CELL DECONTAMINATION WITH HYDROGEN PEROXIDE VAPOR

For our Dispensing hot cell family we have the option available for a full automatic decontamination cycle of multiple enclosures by using Hydrogen Peroxide Vapor (HPV). Our shielded isolators and their adjacent compartments provide a controlled aseptic environment. To minimize the risk of decontamination a validated sterilization cycle is essential.

The HPV process is tested and validated with a 6-log sterility assurance level. Standard cycles available for the following combinations of compartments:

Dispensing hot cell main compartment (including adjacent compartments such as the waste and product retrieval port) in- or excluding the preparation box. This off-the-shelf solution saves lead-time and cost. *On request, HPV decontamination can also be integrated in other Von Gahlen hot cell types.*

## PRO'S OF DECONTAMINATION WITH HPV

- Unmatched level of effectiveness spanning every exposed surface of an enclosed area.
- The HPV will be converted rapidly into water vapor and oxygen, leaving no residue behind.
- Rapid decontamination cycles. A full 6-log cycle for the whole system (Dispensing hot cell + Preparation box + Waste + Product Retrieval Port) combined will take approximately 2.5 hours for a closed system with catalytic aeration unit. When the HPV can additionally be extracted through the HVAC (with or without catalytic filter) this time will be even shorter.

DISPENSING HOT CELL WITH ADJACENT COMPARTMENTS

HPV GENERATOR



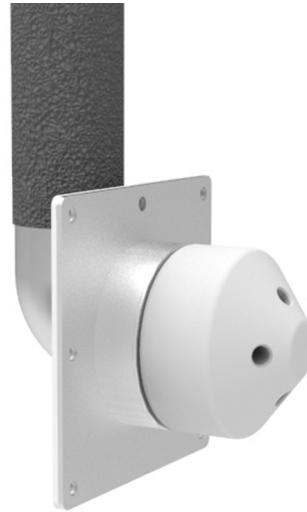
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Catalytic aeration unit to decompose HPV in a closed system



## THE PROCES EXPLAINED

### 1. Conditioning Phase

To prevent too much condensation inside the compartment the compartment is first warmed up.

### 2. Gassing Phase

HPV is injected through a fixed nozzle in the dispensing compartment by the HPV generator.

### 3. Dwell phase

With the vaporization now complete, the enclosed area is at a standstill, allowing the peroxide to dwell on every exposed surface.

### 4. Aeration

The HPV is extracted out of the compartment until a safe hydrogen peroxide concentration in the compartment is met. A small catalytic filter in the generator [and optional

- A large catalytic aeration unit in a close system configuration and/or
- A large catalytic filter in the HVAC]

helps the hydrogen peroxide breaking down faster into the safe elements water and oxygen.

## INJECTION METHOD

The hydrogen peroxide vapor is injected directly into the main compartment through a fixed nozzle resulting in maximum effectiveness. The advantage of injecting the HPV below the downflow filter, instead of via the air inlet of the Hot Cell, is a much faster cycle time. This is achieved by not oversaturating the downflow filter.

MORE INFO?  
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