Decontamination Transfer Chamber

The essential function of a decontamination transfer chamber is the transfer of goods from a room with a lower cleanroom class to a room with a higher cleanroom class with simultaneous decontamination.

The decontamination in the chamber happens either with PAA (peracetic acid) or H_2O_2 (hydrogen peroxide).
Both procedures are very effective and achieve a SAL of 10^6.

Although due to a less corrosion effect and simpler validation, the decontamination with H_2O_2 is commonly preferred.

The picture shows a pass through H_2O_2 transfer chamber with bottom equal drive in and integrated H_2O_2 system. In the foreground the control cabinet with a protocol printer and the control panel is visible.

Properties of the Skanair decontamination transfer chamber

- integrated H_2O_2 decontamination system
- fully automatic decontamina-tion cycles, up to 5 cycles storable
- chamber made of stainless steel 316L with radiused edges and corners
- unidirectional flow ceiling with HEPA filters class EU 14 (min. 99,995% filtration efficiency)
- Inlet and outlet air HEPA filters class EU 14
- capacity of max. 8 baskets or according to URS

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Typical PAA chamber, viewed from the unclean side. The loading and unloading is done manually. The airflow is unidirectional. PAA is directly injected in the chamber by nozzles. During the fumigation and the decontamination time there is no air movement within the chamber.
Aeration happens with fresh air from the surrounding environment. The exhaust air movement is directed into a separate exhaust system.

The SIS 700 H_2O_2 System

First the chamber is preconditioned to a certain humidity level with a Munters dehumidifyer or compressed air.
The dehumidifyer is controlled by a humidity sensor and the PLC of the chamber.
In the second step controlled H_2O_2 quantities are given to the evaporator. After evaporation and decontamination the chamber is flushed with air.

The reception unit on top of the scale takes standard bottles of different manufacturers from 1l to 2,5l.
The scale tares automatically the H_2O_2 amount available.

The decontamination cycle can't be started if there isn't enough H_2O_2 in the bottle - a corresponding message is displayed on the panel.

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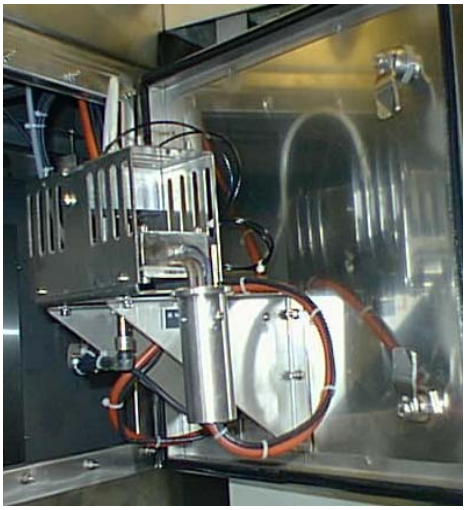
For easy cleaning the vaporizer can be taken off. A position sensor prevents in case of incorrect installation the H_2O_2 vaporization. The vaporizer is temperature controlled, vaporization can't be started at low temperatures. A H_2O_2 droplet-counter controls the pump and the scale.



A 6 channel recorder is used for documentation of the cycle parameter.

Advantages of the H_2O_2 decontamination

- safe destruction of spores, viruses, bacteria and fungy
- short decontamination cycles
- gentle to all sorts of material
- high decontamination capacity
- no residuals

Advantages of the H_2O_2 decontamination chamber

- full documentation of all decontamination parameters
- safe handling due to interlocked doors
- sufficient airflow in the chamber due to unidirectional flow
- easy loading and unloading with upper and lower trolley
- easy to clean
- safe operation even in case of system breakdown

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