

Infection Prevention Measures on our WaterLock 2

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Dear valued customer,

Dräger uses the WaterLock 2 (6872130) and the Infinity ID WaterLock 2 (6872020) on a variety of Anesthesia Workstations and Gas Measurement Systems for protection of the patient and device. In the following text both variants will be referred to as WaterLock 2.

The WaterLock 2 is equipped with a purpose-made membrane technology, which protects the relevant system against condensate, aerosols and microorganisms from the patient. The key components are **two hydrophobic, microporous membranes** made of **Polytetrafluorethylene** (PTFE). These membranes separate condensate and microorganisms physical-geometrical out of the air flow.

The separated (and contaminated) condensate can be removed by using a standard syringe on the port at the back of the WaterLock 2. That allows the WaterLock 2 to be used for 4 weeks.

To prove the infection prevention measures we tested our WaterLock 2 **in independent laboratories**.

In 2015 the German consulting centre for hospital epidemiology and infection control (BZH GmbH in Hamburg, Germany) performed extensive testing.

For this testing, spores of *Bacillus atrophaeus* ATCC 9372 were used.

The *B. atrophaeus* is widespread, nonpathogenic and sporulating – it has a high chemical and thermal resistance. **The spores are smaller than the most relevant bacteria and fungi in human medicine.**¹

For this test the test spore was diluted to a working suspension with 1×10^8 CFU/mL.

In the test setup a Patient Gas Monitor „Vamos“ with a flow rate of 200ml/min was used. A Gas Sample Line and a WaterLock 2 were connected upstream.

For 23 days over a period of four weeks a variety of single runs between 7.5 and 14 hours (median 9.63hrs) were performed.

During that test series the membrane of the WaterLock 2 was exposed to a calculated value of 4.64×10^9 CFU test spores.

In the downstream technology (Vamos) no evidence of the test spore was found in any of the 23 performed tests.

So the WaterLock 2 was used in a practical use case for 4 weeks and during that period it was exposed to a high microbiological contamination.

The WaterLock 2 showed a **full separating capability** over a period of 4 weeks for all relevant bacteria and fungiⁱⁱ.

The Viral Filtration Efficacy (VFE) was proven in a separate test in a second independent laboratory.

The WaterLock 2 has a **Viral Filtration Efficacy of 99.99981%**.

As human pathogenic viruses, exposed from infected and damaged cells, don't come in a raw form but with necrotic tissue, mucus, blood or other body fluids a passage through the hydrophobic filter membrane of the WaterLock 2 is not possibleⁱⁱⁱ.

Sincerely,



Patrick Bönig

Product Management

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ⁱ Marquis, R.E.; Gerhardt P. 2001. Bacterial Endospores – John Wiley&Sons.

ⁱⁱ Martensen; Modified membrane of the watertrap WaterLock 2– Deutsches Beratungszentrum für Hygiene; 2015.

ⁱⁱⁱ Solbach, Mecke: Keimabscheidung durch den WaterLock™ Institut für Medizinische Mikrobiologie und Hygiene der Medizinischen Universität zu Lübeck; 1999.