

Use of Breathing Filters

Breathing filters provide an effective barrier that prevent cross contamination between patients, respiratory breathing systems, equipment and the clinical environment. Their use is widely recognised as beneficial and is recommended by a number of Anaesthetic Associations¹.

The threat to patients

Patients who require an artificial airway have their natural physiological protection bypassed. This will increase the risk of cross contamination between patients and healthcare equipment. The cross contamination of patients via an anaesthetic system has been reported, and documented areas of concern regarding infection includes Hepatitis C, *Mycobacterium tuberculosis*, blood in sputum and the SARS virus.

Critically ill patients are commonly at risk of infection and particularly from Ventilator Associated Pneumonia (VAP). This nosocomial infection increases morbidity and potential mortality as well as the cost of treating the patient. The strategic use of an efficient breathing filter will provide an effective barrier between patients, breathing systems and ventilatory equipment.

Proven efficiency

The Intersurgical range of breathing filters has been designed for the protection of the patient, breathing system and equipment. They have been independently tested and proven to be highly efficient in preventing the passage of bacteria and viruses. Clinically relevant testing is carried out on all products using *Bacillus subtilis* (1.0µm x 0.7µm) and Ø174 bacteriophage, additional testing includes *Mycobacterium tuberculosis* (0.3µm x 1.0µm), Hepatitis C (0.03µm) and MS-2 coliphage (0.02µm). These tests provide you with clinically relevant information to allow evidence-based decisions to be made on the most appropriate product to meet your clinical requirements.

Potential infectious viruses [Particle sizes µ microns]

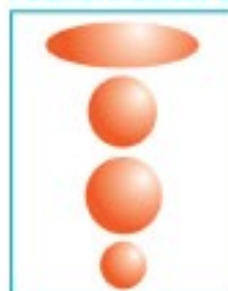


Coliphage T1 [0.017µ]
MS-2 coliphage [0.02µ]
Hepatitis C [0.03µ]
Adenovirus [0.07µ]

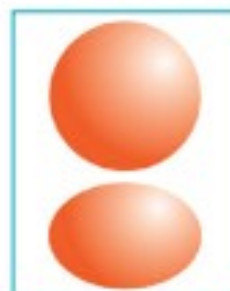


HIV [0.11µ]
Cytomegalovirus (CMV) [0.1µ]
Orthomyxovirus [0.1µ]

Potential infectious bacteria [Particle sizes µ microns]



Mycobacterium tuberculosis
[0.3µ x 1.0µ smallest size]
Serratia marcescens [0.45µ]
Pseudomonas aeruginosa [0.5µ]
Brevundimonas diminuta [0.3µ]



Staphylococcus aureus [1.0µ]
Bacillus subtilis [1.0µ x 0.7µ]

Essential requirements

The Intersurgical range of breathing filters offers a choice of electrostatic and pleated mechanical filters with a range of patient connections, providing a choice of products to meet various clinical situations.

- Independently validated Filtration Efficiency²
- Proven filtration against *Mycobacterium tuberculosis* and Hepatitis C
- Proven efficiency not affected by anaesthetic agent
- Safe inert material
- Option of patient connections – conveniently packed and ready for use
- Lightweight – reducing patient trauma
- Low compressible volume – reducing rebreathing of CO₂
- Low resistance to flow – over 24 hours
- Safe, secure ISO connectors
- Compliance to all relevant international standards

Filtration efficiency

Filtration performance is determined by independent microbiological testing against clinically relevant bacterial and viral challenges. The level of breakthrough of the challenge determines the efficiency. This efficiency is reported as a percentage based upon this break-through.

Number of organisms challenging the filter	Number of organisms passing through the filter	Efficiency of the filter
100,000	1,000	99%
	100	99.9%
	10	99.99%
	1	99.999%

References

1. Association of Anaesthetists of Great Britain and Ireland 1996. Danish Society of Anaesthetists 1998. French Society of Anaesthetists 1998.
2. All filters are independently validated for filtration efficiency at the Health Protection Agency, Porton Down, Salisbury, Wiltshire, U.K and Nelson Laboratories Inc, USA. All quoted performance figures are mean values.

Filta-Guard™ range

High-efficiency

A dedicated breathing filter designed for use in breathing systems in anaesthesia and intensive care, the high-efficiency Filta-Guard protects the patient, hospital personnel and equipment from potential microbial contamination. The Flow diffuser improves performance and optimises resistance to flow.



Code	1944000	1944003	1944011
Box Qty.	70	70	20
User lock port		✓	✓
Filtration efficiency	>99.999%	>99.999%	>99.999%
Resistance to flow at 30L/min	1.0cm H ₂ O	1.0cm H ₂ O	1.1cm H ₂ O
Resistance to flow at 60L/min	2.3cm H ₂ O	2.48cm H ₂ O	2.8cm H ₂ O
Compressible volume	67ml	67ml	67ml*
Weight	40g	41g	54g
Connections	22F-22M/15F	22F-22M/15F	22F-22M/15F
Minimum tidal volume	>200ml	>200ml	>200ml
Accessories			Superset™ catheter mount** 3504000