WELCOME TO MBS

At Microbe Biosolutions, we develop and deliver biological filters for the efficient and sustainable removal of hydrogen sulfide (H_2S), ammonia, acid gases – and also VOCs – in the same filter solution. Our systems are based on natural, chemical-free purification and are designed to ensure high operational reliability, long lifespan, and minimal environmental impact.

We provide filter systems to biogas plants, the wastewater sector, utilities, and industry. Our BioMax series covers everything from compact units to large modular systems with purification capacities ranging from 100 m³/h up to 13,000 m³/h – tailored to your needs.

With our hybrid filter technology and a focus on recyclable materials, we offer one of the most environmentally friendly and flexible air treatment solutions for critical infrastructure environments.

We already have established partnerships in Denmark, Sweden, and Norway – and our ambition is clear: To become the leading provider of biological filter solutions in the Nordics.

THE TECHNOLOGY IN BRIEF

By using our hybrid filter, two supplementary and highly effective mechanisms are activated:

1. Passive adsorption: Odorous substances bind to the surface of the biological filter material, where they are held and retained.
2. Biological degradation: The captured odorous particles are actively broken down by microorganisms in the filter mats. This process significantly reduces the concentration of hydrogen sulfide and other odorous substances – not just by binding, but through actual chemical and biological transformation.

ENVIRONMENT AND MATERIAL RECYCLING

We consider our solution a sustainable alternative to traditional methods for reducing hydrogen sulfide (H_2S) and VOCs. Our filter housings are made of PE plastic, which has the lowest CO_2 footprint among plastic types and can be fully recycled after disposal.

At the same time, our biological filter mats are chemical-free and can be disposed of as regular combustible waste – unlike chemical filters, which are often classified as hazardous waste. For VOC removal, we use an activated carbon product that is also disposed of as regular carbon waste. This makes our solution more environmentally friendly and easy to handle at the end of its life.

MADE IN DENMARK

All our housings are designed by Microbe Biosolutions and produced in close collaboration with Dansk Plast A/S in Esbjerg. Dansk Plast is our long-standing production partner and has many years of experience with welding and processing plastic materials for technical solutions.

The collaboration covers the entire process – from design and development to finished production – and ensures high quality and short lead times. By consolidating all production in one place, we gain close collaboration and full insight into the scope of the task, which provides flexibility and reliability throughout the project.

SERVICE AGREEMENTS – YOUR GUARANTEE FOR OPERATION AND COMPLIANCE

We offer service agreements for all our filter systems to ensure stable operation, documented performance, and full regulatory compliance. A typical service agreement includes:

- Replacement and proper environmental disposal of filters with >20% capacity loss, based on lifespan analysis
- Annual calibration of sensors
- Biannual filter performance measurement and written reporting – suitable for documentation to authorities
- Ongoing recommendations for operational optimization
- Technical support during the entire contract period

A service agreement is not just maintenance – it's security, traceability, and full control over your operations.

MINIFILTER CARBON 75/110 – FOR SMALL PIPES AND COMPACT INSTALLATIONS

MiniFilter Carbon 110 is a versatile and compact filter designed to fit directly into standard Ø75 and Ø110 mm pipe sockets. With its lightweight construction and 220 grams of activated carbon, it provides a simple yet effective solution for household-level and small sewage installations.

This filter operates by passive airflow, where odorous gases are absorbed into the carbon, preventing nuisance in the surrounding area. It requires no power supply or moving parts, making it both reliable and low-maintenance.

Typical applications:

- Septic tanks in single-family homes
- Venting pipes (max. 2 stories)
- Small wastewater treatment plants (1–5 households)
- Infiltration systems
- Replacement for vacuum valves in sanitary systems

Advantages:

- Compact and easy to install
- Low weight – easy handling
- Passive operation – no maintenance except carbon replacement
- Cost-effective solution for small installations

Technical Data:

- Capacity: ~1.5 m³/h
- Carbon content: 220 g
- Material: PE plastic
- Installation: Directly in Ø75/110 pipe socket
- Lifespan: Up to 2 years (based on Danish tests)

MINIFILTER CARBON 160 – HIGHER CAPACITY FOR LARGER INSTALLATIONS

MiniFilter Carbon 160 is developed for installations with higher odor filtering needs and Ø160 mm pipe dimensions. With 500 g of activated carbon, it offers longer service life and higher filtering capacity.

Designed for vertical installation in standard pipe sockets, the entire filter is disposed of as combustible waste when saturated and replaced with a new one – making maintenance simple and fast.

Technical Data:

- Capacity: ~7 m³/h
- Carbon content: 500 g
- Material: PE/ABS plastic
- Installation: Vertical in Ø160 pipe socket
- Lifespan: Up to 2 years depending on load
- Replacement: Whole filter disposed and incinerated

Typical applications:

- Household pump stations with high airflow
- Small wastewater plants with multiple users
- Ventilation from large septic tanks
- Ventilation wells
- Pump stations in smaller sewer sections

Advantages:

- High capacity and larger carbon volume
- Easy replacement – whole filter swapped upon saturation
- Suitable for "install-and-forget" users

MINI HYBRIDFILTER 160 – WHEN PERFORMANCE MEETS SUSTAINABILITY

Mini HybridFilter 160 combines chemical filtration via activated carbon with biological degradation through seeded biomass and a special ammonia-absorbing layer. This layered design ensures high filtration efficiency and functionality in humid environments, where traditional carbon filters often fail.

The bioactive mat breaks down H_2S and odorous gases while protecting the carbon from moisture – significantly extending lifespan and performance.

Typical applications:

- Pump stations and ventilation wells with high humidity
- Septic tanks with fluctuating load
- Mini plants in moist environments
- Biogas plants with both H_2S and ammonia presence

Advantages:

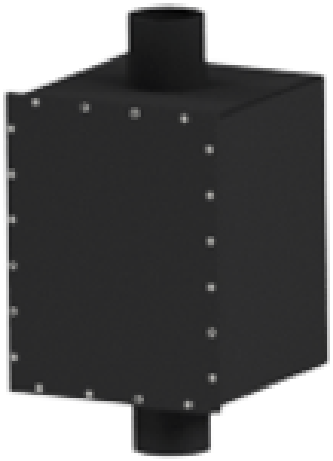
- Very high filtration efficiency
- Active biological degradation
- Works in humid conditions
- Modular design – mats can be replaced individually
- Eco-friendly, chemical-free operation

Technical Data:

- Filter layers: Gas distributor, ammonia, hybrid mats
- Material: HPE plastic
- Installation: Custom-fit (typically Ø160)
- Capacity: 5–10 m^3/h depending on conditions
- Lifespan: Up to 2 years – mats replaceable individually

BioMax100 – Compact Hybrid Filter for Small Installations

BioMax100 is the smallest model in the BioMax series, developed for small pump stations and wastewater wells with low to moderate airflow. The filter combines activated carbon and biologically seeded filter mats to effectively remove both hydrogen sulfide (H_2S) and ammonia – even in humid environments where traditional carbon filters lose effectiveness.



It is rated for up to 100 m³/h, but always equipped according to the specific airflow, load, and conditions of the installation. This ensures optimal performance and lifespan. BioMax100 can be installed as a standalone unit or integrated into existing systems and is available in passive and monitored versions.

Technical Data:

- Capacity: Up to 100 m³/h (depending on airflow and load)
- Filter type: Hybrid with activated carbon and biological mat
- Material: PE housing
- Flow Type: Natural (Passive) or Forced (Active)
- Installation: Freestanding or integrated in existing system

Typical Applications:

- Wastewater wells with limited volume
- Small pump stations
- Installations with low airflow

Advantages:

- Effective odor reduction in a compact format
- Hybrid filter technology with biological degradation
- Available with or without automatic monitoring

FAQ

Q: Can it be used without electronics?
A: Yes, the passive version requires no power or control system.
Q: Is it suitable for municipal systems?
A: Yes, especially for smaller units, pilot projects, and decentralized solutions.

BioMax300 – Hybrid Filter for Medium-Sized Pump Stations and Sewer Installations

BioMax300 is designed for medium-sized installations with moderate airflow and higher odor control requirements. Like the rest of the BioMax series, it combines activated carbon with biologically active mats to efficiently remove hydrogen sulfide (H_2S), ammonia, and volatile compounds.

It is always tailored to the specific task, with layers configured based on airflow and pollutant levels. With a capacity of up to 225 m³/h, actual performance depends on parameters like concentration, temperature, and humidity. Available as a passive unit or with monitoring (Standard A/B), and typically installed on a foundation or in a control cabinet.

Typical Applications:

- Pump stations in residential areas
- Ventilation systems with moderate load
- Sewer wells and wastewater installations

Advantages:

- Efficient purification for medium loads
- Chemical-free operation with biological degradation
- Optional digital monitoring and remote access

FAQ

Q: How is it installed?
A: Freestanding on a foundation or in a cabinet – ready for connection.
Q: Does it require special service?
A: Local servicing is possible, but a service contract is recommended for optimal operation.

Technical Data:

- Capacity: Up to 225 m³/h (depending on load and requirements)
- Filter type: Hybrid with activated carbon and biological layers
- Material: PE housing
- Flow Type: Natural (Passive) or Forced (Active)
- Installation: Stationary on foundation or in cabinet

BioMax600 – Scalable Hybrid Filter for Small and Large Wastewater Installations

With a capacity of up to 600 m³/h, BioMax600 is available in passive, Standard B, or full monitoring Standard A versions. Filter configuration is based on airflow, H_2S levels, humidity, and VOC load to ensure optimal purification. The stationary setup makes it ideal for both new installations and retrofit optimization – cost-effective and efficient.

Designed for medium-sized treatment and pre-treatment plants, BioMax600 combines biological and chemical filtration in a flexible system. It adapts to varying load profiles and operating conditions, ideal for sites with fluctuating H_2S and ammonia concentrations.

Technical Data:

- Capacity: Up to 600 m³/h (adjusted for conditions)
- Filter type: Hybrid with biological and chemical layers
- Material: PE housing
- Flow Type: Natural (Passive) or Forced (Active)
- Installation: Stationary or modular configuration

Typical Applications:

- Medium-sized treatment and pre-treatment plants
- Sewer overflow wells and centralized air treatment
- Industrial wastewater installations

Advantages:

- Scalable solution for varying airflow
- High efficiency and long lifespan
- Option for full monitoring

FAQ

Q: Can it be used without electronics?
A: Yes, the passive version requires no power or control.
Q: Is it suitable for municipal systems?
A: Yes, particularly for small units, pilots, and decentralized solutions.

BioMax5000 – High-Capacity Hybrid Filter for Large Wastewater and Biogas Plants

BioMax5000 is the flagship of the BioMax series, designed for large centralized treatment plants, biogas facilities, and industrial installations with high airflow and complex emission profiles. The modular hybrid filter system combines biological and chemical purification – including VOC removal – in a robust, low-maintenance design.

Built to handle up to 5000 m³/h, the system is scaled via modules based on airflow, pollutant levels, and operating hours. Delivered by default with Standard A monitoring, which enables full remote control and documentation.

Typical Applications:

- Biogas plants and large treatment facilities
- Municipal central installations
- Industrial plants with major emission sources

Advantages:

- Very high capacity and purification efficiency
- Fully automated control and documentation
- Long service life and low maintenanceFAQ

Q: Can the system be centrally controlled?
A: Yes, via network and remote monitoring with full access to operational data.
Q: How is maintenance handled?
A: Through a service agreement with measurements, replacements, and documentation.

Technical Data:

- Capacity: Up to 5000 m³/h (depending on load and configuration)
- Filter type: Modular hybrid system
- Material: PE housing with reinforced components
- Flow Type: Natural (Passive) or Forced (Active)
- Installation: Stationary, modular, and scalable

MBS Dehumidifier – Effective Humidity Control for Optimized Air Purification

This unit optimizes humidity before filtration and extends filter life – especially in environments with high H_2S, ammonia, and VOC concentrations, some of which are removed during the process. The dehumidifier is modular and customizable to match airflow and temperature conditions.

Ideal for biogas plants, wastewater facilities, and industrial environments with warm and humid airflows, it uses advanced heat exchanger technology to lower air temperature and condense moisture – improving conditions for both carbon and hybrid filters.

Technical Data:

- Capacity: Dimensioned by airflow (typically up to 1200 m³/h per unit)
- Power consumption: ~500 W (depending on fan choice)
- Operating temperature: Optimal at 27–45 °C and RH > 75%
- Design: Two-stage heat exchanger with condensate separator
- Materials: Chemical-resistant, weatherproof components
- Installation: Stationary, freestanding or integrated into ductwork

Typical Applications:

- Biogas and process plants with high humidity
- Pump stations and carbon filter systems
- Installations with condensation and moisture issues

Advantages:

- Extends the life of subsequent filters
- Removes up to 400–500 liters of moisture per day
- Low energy consumption and heat recovery option
- Resistant to aggressive gases
- Suitable for parallel installation with high airflow

Contact Us – We Tailor the Solution to Your Needs

At Microbe Biosolutions, it's not just about supplying a filter – it's about designing solutions that make a real difference. We work closely with our clients to create eco-friendly and reliable systems that not only reduce emissions but actively contribute to a greener and more responsible operation.

Every installation is customized – both technically and practically – to make sense in your specific context. Whether the solution is:

- An integrated part of a new system,
- An upgrade of existing infrastructure,
- Or a standalone addition to solve a specific odor or emission problem.

We offer guidance throughout the entire process – from needs assessment and design to configuration, installation, and documentation. Our flexible approach makes it possible to tailor solutions in terms of size, capacity, and complexity – always with sustainability and user-friendliness at the center.

🤝 Ready to take the next step towards greener and more efficient operations?

Contact us – we'll help you find the right solution for your needs.

If you have questions or want to learn more about our solutions, you're always welcome to contact us. We're ready to help with advice, ordering, and technical support.

✉ Email:
📞 Phone:

We look forward to hearing from you!