

A Lifecycle Performance Company



ENVIROGEN Biofilter Technology

Proven performance and low lifecycle
costs for VOC & Odor Control



SUSTAINABILITY REDEFINED

Advanced Technology for Managing Industrial & Municipal Emissions

For the control of VOCs, HAPs and odor-causing compounds, Envirogen offers a state-of-the-art portfolio of biological treatment systems – including biofilters, biotrickling filters and combinations of the two technologies – in both standardized and custom designs. Envirogen can provide solutions for a broad range of contaminants and flow rates – from 120 to over 100,000 cfm. Envirogen biofilters are the result of more than three decades of experience in managing industrial and municipal emissions, featuring advanced engineering concepts that can be tailored to provide a low lifecycle cost solution in your facility.

Effective and Sustainable

Envirogen biofilters are ideally suited for contaminants that are low molecular weight, polar and readily biodegradable. They are particularly effective for low loading applications at high flow volumes. Removal ratios in excess of 95% for water soluble compounds and 90% for BTEX and similar compounds are readily achievable. Envirogen biofilters are extremely effective in treating odors caused by hydrogen sulfide (H_2S) and other reduced sulfur compounds. Greater than 99% H_2S removal and 90% odor removal are common. As stand-alone systems or in combination with other emissions control technologies, Envirogen biofilters offer an inherently sustainable solution with ease of operation and very low operating costs.



Seven Things **YOU WANT TO KNOW** About Envirogen Biofilters

- 1 Cost effective:**
Very low operating costs.
- 2 Reliable:**
Proven, technology in over 120 installations.
- 3 Simple operation:**
Minimal maintenance.
- 4 High removal efficiencies:**
Useful for broad range of contaminants. Can be effectively combined with other technologies to reduce costs and improve performance.
- 5 Broad range of configurations:**
For different influent air & loading rates
 - Modular
 - Built-in-Place
 - Biotrickling Filter (Biotower)
 - Biotrickling/Biofilter combination
- 6 Long-life filter media:**
 - Guarantees up to 10 years depending on the application.
 - Media matched to project.
- 7 Sustainable technology:**
 - Reduced chemical usage/storage
 - Contaminant destruction
 - Reduced energy usage
 - Reduced carbon footprint
 - Lower overall emissions



Solutions tailored to your requirements – and your facility

Modular Biofilters (I/H/B Series)

For lower air flow rates and sites requiring a smaller system footprint, Envirogen Modular Biofilters deliver reliable, cost-effective performance. These engineered pre-fabricated fiberglass systems come in a range of standard configurations and can be adapted to flow and loading requirements. They can be shipped with all media pre-installed and are easily installed at the site. Our industrial modular biofilters (I & H Series) can handle from 120 to 8,350 cfm air flows based on size and loading. The I-series modular biofilters feature internal humidification and irrigation systems.

Biotrickling Filters (BT Series)

Envirogen Biotrickling Filters are vertically-oriented biofilters filled with an inorganic media featuring 100% water recirculation. The filters' unique design can address high concentration of H_2S odors in areas where space is at a premium – offering a shorter retention time and higher throughput than a conventional biofilter. They can also treat high concentrations of VOCs and be chemically augmented when needed. The recirculation water maintained in the tower allows for optimal control of pH, nutrient levels and biofilm thickness. In some applications, an intermittent, single-pass irrigation system can be supplied, eliminating the need for a recirculation pump.

Integrated Biotrickling/Biofilter Systems (BTF Series)

The result of 20 years of research, design and operating experience, Envirogen's Integrated Biotrickling/Biofilter Systems are some of the most technically advanced solutions for low- to moderate-flow applications available. These systems combine the high performance of a biotrickling filter in removing H_2S , with the VOC and reduced sulfur compound efficiencies of a biofilter in a single, pre-fabricated fiberglass system that offers ease of installation and a small system footprint. One of the design advantages of the Integrated Biotrickling/Biofilter System is that it can be configured to offer multiple zones of treatment – for efficient and cost-effective management of complex air streams.

Built-in-Place Biofilters (BIP Series)

Envirogen Built-in-Place Biofilters are custom designed solutions for mid- to high-air flow VOC and odor control applications. Installations are based on standardized multibay designs and system components to lower installed costs for air flows ranging from 2,000 to 72,000 cfm. They can be configured with both biofilter and biotrickling designs for multi-zonal treatment. Envirogen Built-in-Place Biofilters are intended for centralized treatment solutions and are ideal for emissions control in industrial manufacturing applications.

The Envirogen Biofilter Portfolio

Line	Models	Media (ft ³)	CFM	EBRT/seconds (default)
Biofilter (H-Series)	8	120-680	120-2720	10-60 (30)
Biofilter (I-Series)	13	450-3900	224-8350	30-120 (75)
Biofilter box (P&B Series)	14	448-4176	450-1670	15-60 (30)
Biotower (BT)	30	120-3500	200-14000	10-30 (15)
BT/BF Box (BTF Series)	11	550-4500	800-9000	30-55 (40)
Built-in-Place	24	2000-48000	2000-72000	20-60 (30)

The Envirogen Sustainable Emissions Control Offering

For a broad range of industrial emissions applications, the Envirogen Sustainable Emissions Control offering features the use of both biological and enhanced adsorption treatment technologies to control contaminants covered under the Clean Air Act and state and local air quality regulatory programs. Used alone or together, the two-technology approach allows Envirogen to treat organic and inorganic, polar and non-polar emission constituents at varying concentrations and air flow rates.

Our biological and adsorbent technologies for emissions control are sustainable because they are safe and high performing. They offer the ability to reduce chemical and energy consumption, the opportunity for recycle/re-use and to lower carbon footprint compared with other treatment technologies. They are sustainable in another sense due to their low operating costs – with the ability to deliver significant savings over the lifecycle of a project.

Biofilter Applications

- Asphalt Manufacture
- Chemical Processing
- Coatings Manufacture
- Composting
- Food Processing
- Fragrance Manufacture
- Landfill Gas/Leachate Extraction
- Petroleum & Refining
- Pulp & Paper Manufacture
- Rendering
- Wastewater Collection & Pumping
- Wastewater Treatment
- Wood Products



For more information on Sustainable Emissions Control or our biofilter portfolio, visit www.envirogen.com.

Corporate Office

2627 Chestnut Ridge Rd, Suite 260
Kingwood, TX 77339
Tel: 877.312.8950

info@envirogen.com
www.envirogen.com

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