

A Lifecycle Performance Company



ENVIROGEN

Odor Control for Food & Beverage Plants

Proven performance and low
lifecycle costs for VOC & Odor
Control



Advanced Technology for Managing Emissions and Odors from Food & Beverage Facilities

Food and beverage plants often create odors from the production process, solids handling, or wastewater treatment areas and may come under pressure from local residents to address any unacceptable levels of odors.

For such food and beverage odor sources, Envirogen has treatment solutions to handle difficult nuisance odors such as hydrogen sulfide, aldehydes, ketones, alcohols, ammonia, and mercaptans, as well as various other volatile organic compounds (VOCs), eliminating the problem so the air can be discharged to the environment. Our state-of-the-art portfolio of biological treatment systems include 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. Our US manufactured systems feature advanced engineering concepts that can be tailored to provide a low lifecycle cost solution in your facility.

Effective and Sustainable

Envirogen biological air treatment units 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 are readily achievable. Envirogen systems 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 systems offer an inherently sustainable solution with ease of operation and very low operating costs.



Seven Things **YOU WANT TO KNOW** About Envirogen Biological Odor Control Systems

- 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. In some cases, they can be shipped with all media pre-installed for ease of installation at the site. The H-series are round vessels of 6'-14' in diameter, while the B- and I-series are rectangular box biofilters. The I-series includes a humidification chamber for treatment of low humidity feed applications.

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 concentrations 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.

The Envirogen Biofilter Portfolio

Line	Media (ft ³)	Flow Rate (CFM)	EBRT/seconds (default)
Biofilter (H-Series)	120-680	120-2720	10-60 (30)
Biofilter (I-Series)	450-3900	224-8350	30-120 (75)
Biofilter Box (B-Series)	448-4176	450-1670	15-60 (30)
Biotower (BT)	120-3500	200-14000	10-30 (15)
BT/BF Box (BTF Series)	550-4500	800-9000	30-55 (40)
Built-In-Place (BIP)	up to 48000	>100,000	15-60 (30)

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 greater than 100,000 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 Sustainable Emissions Control Offering

The Envirogen sustainable emissions control offering primarily features the use of biological systems. Where necessary, carbon adsorption systems can be added to enhance the treatment of difficult contaminants or for polishing to low discharge levels to meet state and local air quality regulatory programs. This two-technology approach allows Envirogen the flexibility to treat various organic and inorganic, polar and non-polar emission constituents at varying concentrations and air flow rates.

Our biological odor/emissions control technologies are sustainable because they maximize the treatment on-site, compared to phase transfer where the contaminants still need off site treatment. 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.

Food & Beverage Odor Control Applications

- Meat Processing
- Poultry Processing
- Fish Processing
- Breweries & Wineries
- Chocolate Manufacturing
- Flavorings Production
- Bakeries and Other Cooked Products
- Rendering Facilities

In these areas

- Process
- Wastewater Treatment
- Solids Handling



For more information on Sustainable Emissions Control or our biological odor control system portfolio, visit www.envirogen.com.

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