



Biological Filters (Biotrickling)

Product Brochure

Product overview

Biological treatment of hydrogen sulfide (H₂S), ammonia, mercaptans, and volatile organic compounds (VOCs) from wastewater and industrial air streams, achieving more than 99% removal with minimal chemical consumption.

In an Etaniv biotrickling filter (BTF), odorous air is drawn through a packed bed colonized by naturally occurring bacteria. As the gas passes through the continuously irrigated media, target compounds dissolve into the biofilm where micro-organisms oxidize them into harmless end-products — sulfate, nitrate, water, and CO₂. The result is a robust, low-operating-cost system with no ongoing chemical dosing for the biological stage.

Etaniv designs each BTF around the site's specific loading using a dual-regime model that accounts for both mass-transfer-limited and reaction-limited operation. Media type, bed depth, irrigation rate, and empty-bed residence time (EBRT) are selected to guarantee the required removal efficiency across the full range of inlet concentrations.

Key features

Key technical and commercial advantages:

- More than 99% removal of H₂S and a broad range of odorous compounds
- Very low operating cost — no chemical dosing required for the biological stage
- Stable performance across fluctuating inlet loads and flow rates
- Corrosion-resistant GRP/FRP construction engineered for biogenic H₂S environments
- Compact footprint with structured or random media matched to the application
- Long media service life with simple, low-maintenance operation

Typical applications

Typical application types include:

- Wastewater treatment plant headworks, inlet works, and sludge handling areas
- Sewage pump stations and rising-main discharge points
- Industrial process air with high H₂S or organic odor loads
- Composting, food processing, and rendering facilities

Technical specifications

Flow rate (m³/hr)	Tailored to project — from a few hundred to tens of thousands m³/hr
Target compounds	H ₂ S, ammonia, mercaptans, VOCs and mixed odorous streams
Removal efficiency	Greater than 99% for H ₂ S under design conditions
Media type	Structured or random synthetic media; inert mineral or engineered packing
Empty-bed residence time	Sized per inlet load and target efficiency
Irrigation	Continuous or intermittent recirculation with automatic nutrient control
Materials of construction	GRP/FRP body; corrosion-resistant internals and ductwork
Pressure drop	Low across the bed; fan sized to system hydraulics
Temperature range (°C)	Effective across normal ambient and process temperatures

Product photo



Why Etaniv

Etaniv B.Y. Ltd is an Israeli manufacturer and integrator of environmental technologies for water, wastewater, and odor control. We design, supply, install, and maintain our systems in-house — backed by 20+ years of field experience and international technology partnerships.

- Full lifecycle service — design, installation, and maintenance by one team
- Own manufacture — quality controlled from design to delivery
- Compliant with the Israeli Clean Air Act and Odor Nuisance Guideline
- Backed by international technology partnerships
- 50+ active clients across Israel

Contact us

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