

Airshell®

Biohybrid Filter

Airshell Advantages

- Performs under variable loading
- Treats wide range of compounds
- Handles wide ranging flow rate
- No polishing stage necessary
- Virtually hands-off operation
- Built-in pH buffering
- Very low water use
- Neutral pH discharge water
- Rapid acclimation
- No nutrient feed
- No chemicals required

1. Containment

Sulfur or nitrogen based compounds can produce odors and release dangerous gases when waste air streams undergo turbulence. Waste air streams must be isolated using covers or other structures.

2. Ventilation

Once isolated, the ventilated air is routed to the Airshell treatment system. Depending on the contaminant concentration and the volume of air, ventilation is achieved via ducting and extraction fans under low negative pressure conditions. The air stream is pulled through the system, rather than pushed, decreasing the risk of leaks.

3. Biohybrid Process

The waste air stream is directed through the biohybrid filter beds. This allows contact between the seashells, water, microorganisms, and the odorous or corrosive compounds. Microorganisms utilize the shell media to maintain a robust living matrix. Seashells contain high levels of CaCO_3 , which neutralize the acid byproducts of oxidation. The physical and chemical properties of seashells provide high level removal efficiencies in a small footprint. The end result is clean air that is harmless and odor free.

Airshell Biohybrid Filter Performance

Compounds	Removal Efficiency
Hydrogen Sulfide	≥99%
Ammonia	≥98%
Reduced Organic Sulfur (RSC) Compounds	≥95%



Airashell Biohybrid Filter



Quahog shells

