

WASTE WATER TREATMENT



INNOVATION

ENGINEERING

OPTIMIZATION

BAYER Tower Biology with BAYER Slot Injector Aeration System

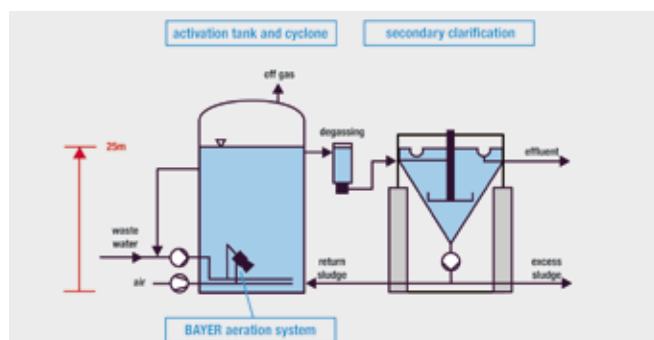
We offer ...

... a modular and flexible system for aerobic industrial waste water treatment.

The first BAYER Tower Biology with the BAYER Aeration System was built in the late 1970s. Since then it was continuously improved, being nowadays a high reliable world class treatment system. It found its successful way to several industries like the

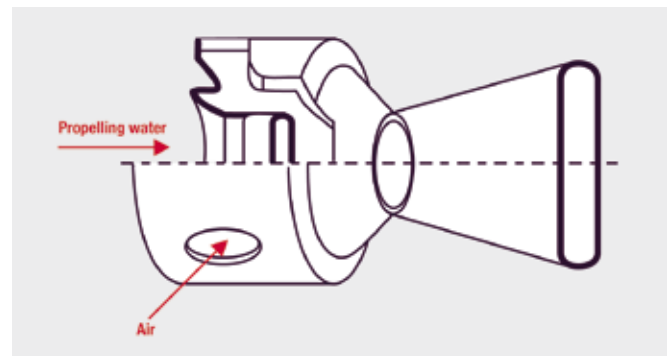
- (Petro-)Chemical
- Pharmaceutical
- Food
- Dye
- Textile

industries all over the world.



Schematic drawing of the Bayer Tower Biology

The BAYER Slot Injector is the main part of the BAYER Aeration System. The kinetic energy of the propelling water drags air into the injector, brakes the gas into small bubbles, and pushes the fine bubble water/air dispersion into the activation tank.



Schematic drawing of BAYER Slot Injector

Your Advantage from BAYER Tower Biology

The BAYER Tower Biology provides optimized invest and operational costs based on:

Optimal Layout

- 30 – 50 % less ground space than conventional system with large open surface
- All tanks above ground ensure high ground water protection

Simple Construction

- Standard tank construction allows conventional welding and lining procedures
- No complicated internal structure like draft tubes or sieve plates



Bayer Technology Services
Powering Your Performance

High availability

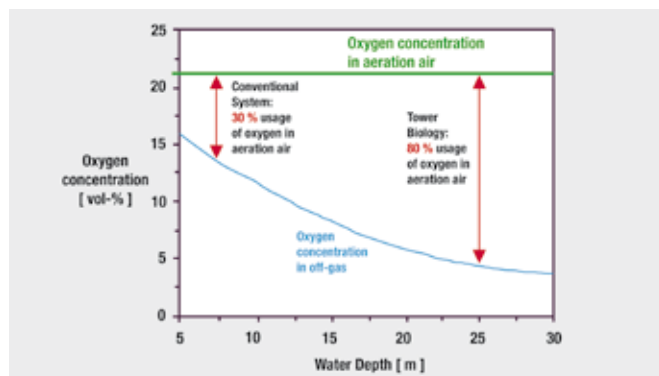
- No moving parts in aeration tank and clarifier
- Operational design based on 30 years of owners experience

High process stability

- Fully mixed reaction system
- Covering easily fluctuations in feed flow and concentrations

Optimal oxygen utilization

- Less than half aeration in comparison to basin biology
- Prevention of air pollution by aerosoles and odors



Oxygen uptake from aeration air

Your Advantage from BAYER Slot Injector Aeration System

The BAYER Slot Injector Aeration System provides low operational costs based on:

High efficiency

- 3.2 to 3.8 kg O₂ / kWh in waste water for long operational time
- No clogging

High availability

- Highest resistance against corrosion and erosion
- Long operational time without maintenance

High flexibility

- Wide operational condition Oxygen Input from 60 to 140 %
- Easy to extend with further injectors



BAYER Slot Injector

Our Commitment / Our Methods

Our commitment is based on our tradition and on our long lasting operational experience.

Our typical project steps from problem definition to commissioning are divided in several breakpoints giving the possibility to adjust the project continuously:

- Laboratory tests and basic plant design (Feasibility Study)
- (Extended) Basic engineering
- Detail engineering
- Delivering of proprietary equipment
- Project and construction management
- Cold and hot commissioning

References (extract)

More than 40 Bayer Tower Biologies were built all over the world with an all-over waste water treatment volume of 1 mio. m³/d

- Bayer, Germany, Chemical Wastewater, 96000 m³/d, 220 O₂/d



- Thane, India, Chemical Wastewater, 36000 m³/d, 4 t O₂/d
- Wesseling Petrochemie, Germany, Chemical Wastewater, 8000 m³/d, 30 t O₂/d
- E.C.C.A.C.I.V. Mexico, Industrial Wastewater, 23000 m³/d, 43 t O₂/d



- Cobega Coca Cola, Spain, Food Industry, 2000 m³/d, 3.2 t O₂/d
- Bayer, Spain, Chemical Wastewater, 800 m³/d, 1.5 t O₂/d
- Agan, Israel, Chemical Wastewater, 8000 m³/d, 12 t O₂/d