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BIOPAQ[®] UASB+

Flexible anaerobic effluent treatment

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A SKION WATER COMPANY.

BIOPAQ®UASB+

BIOPAQ®UASB+ is a flexible solution for anaerobic effluent treatment at low total cost of ownership. It is applicable to a broad range of waste waters and is specifically suitable to treat concentrated waste water with COD measuring 15,000 to 60,000 mg/l.

This system stands out thanks to its highly effective separator design, which ensures very efficient biogas collection and optimal biomass retention. The modular separator can be mounted in any new or existing tank (welded steel, bolted steel, concrete or GRP).

BIOPAQ®UASB+ is Paques' best solution for:

- any industry with waste water containing high concentrations of soluble organic pollutants
- clients with a need for upgrading their existing water treatment installation

Anaerobic waste water treatment

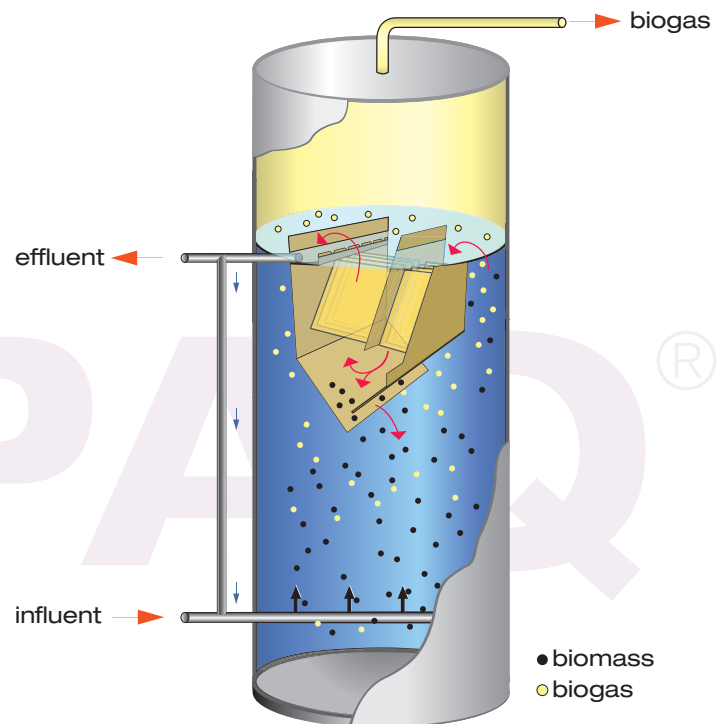
Anaerobic treatment is the sustainable way to meet effluent discharge criteria and to produce biogas simultaneously: methanogenic bacteria convert organic compounds (COD, BOD) into valuable biogas. Paques is world leader in anaerobic waste water treatment, with more than 30 years of experience and over 750 industrial plants.

BIOPAQ®UASB+ separator

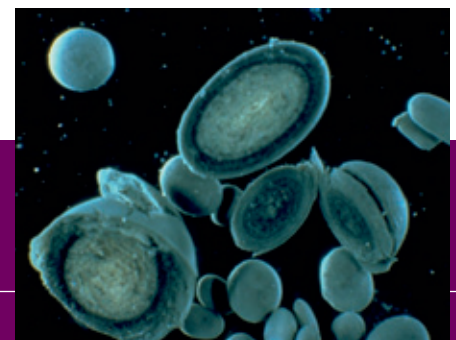
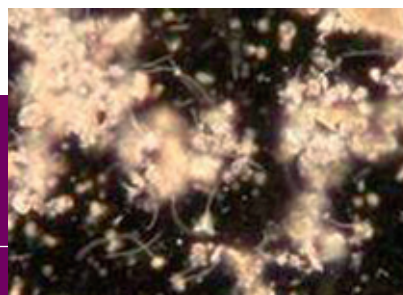
The BIOPAQ®UASB+ reactor contains a smart 3-phase separator to efficiently separate the generated biogas and the biomass from the purified water.

Characteristics of the separator are:

- outstanding biogas collection as degassing takes place separately from sludge/effluent separation
- optimal biomass retention due to large settling area
- modular design to fit in any tank dimension
- built-in cleaning nozzles to minimise the risk of clogging
- highest quality due to Paques Quality Assurance and Welder Qualifications
- material lifetime of over 20 years due to the use of high quality polypropylene



BIOPAQ®UASB+ at pulp mill in China



Depending on the type of waste water, both flocculent and granular sludge can be formed and retained in the reactor

Why choose BIOPAQ®UASB+

1. Economical solution

- Discharge costs are considerably reduced, in most cases 80-90%
- Energy can be generated from the produced biogas
- The separator can be mounted in any new or existing tank; welded steel, bolted steel, concrete or GRP
- Mounting of the separator is independent of tank wall
- Highly effective separator prevents washout of valuable biomass
- Compact reactor design
- Low surplus slib production

2. Stable operation

- The simple and robust influent distribution system is proven to be effective at more than 300 references worldwide
- Fluctuating loads and flows can easily be handled
- The distribution system, together with effluent recirculation, ensures optimal mixing of biomass and waste water
- No odour emission due to closed reactor design

3. Reliable supplier

- Over 30 years of experience in industrial waste water treatment to accommodate the needs of each client
- Proven reliability with more than 750 industrial anaerobic plants
- Technical and performance guarantees
- Additional sustainable technologies available within Paques, for example aerobic post treatment, removal of nitrogen and phosphorous compounds, and biogas desulphurisation

4. Fast delivery

- The 3-phase separators are standardised modules, resulting in short lead times
- Rapid response to customer inquiries, thanks to process- and sales support and in-house laboratory and production
- Guaranteed seed sludge delivery

5. Long lifetime

- Lifetime indication of the propylene separator material is 20 years
- Production according to high standards (ISO 9001)
- Qualified, experienced welders



BIOPAQ®UASB+ to upgrade an existing WWTP of a yeast factory in the Netherlands

BIOPAQ®UASB+ pilot plant available for on-site testing

Paques develops and produces cost-effective water and gas purification systems using innovative biotechnology. Examples are the removal of organics, sulphides, sulphates, nitrogen compounds (ammonium, nitrate), phosphates and metals.

These systems offer added value to industries and municipalities, such as:

- savings on water discharge costs
- generation of green energy
- re-use of water
- recovery of valuable substances from waste water

This way Paques helps its clients to combine economic progress with environmental responsibility.



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