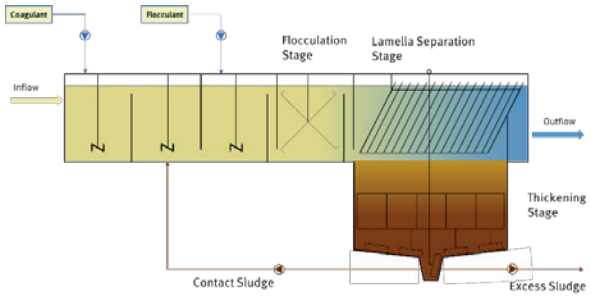
ECoFlocX® Process Treatment for Potable Water

Facts + Benefits

- **Co**agulation, **Flo**cculation and removal by lamella settling and integrated thickening **(X)**.
- Suitable for efficient high suspended solids removal to get high-level water quality
- Multiple chamber coagulation and contact sludge flocculation
- Uniform hydraulically controlled lamella flow
- Sedimentation integrated with sludge thickening
- High excess sludge concentration



Our Process Technologies are built on four Pillars:

Energy Cycle
Energy efficiency to reduce costs on wastewater treatment plants.

Nutrient Cycle
Nutrient recovery for sustainability in operation.

Water Cycle
Clean water for health, hygiene and as the core of growth and development.

Lifecycle Services
Comprehensive services and operational support to optimise plant efficiency.

CNP CYCLES watering life

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DEUTSCHE PHOSPHOR PLATTFORM | Member of German Water Partnership | Mitglied der DWA

Innovative Technologies for nutrient recovery and energy optimization of wastewater and water treatment plants.

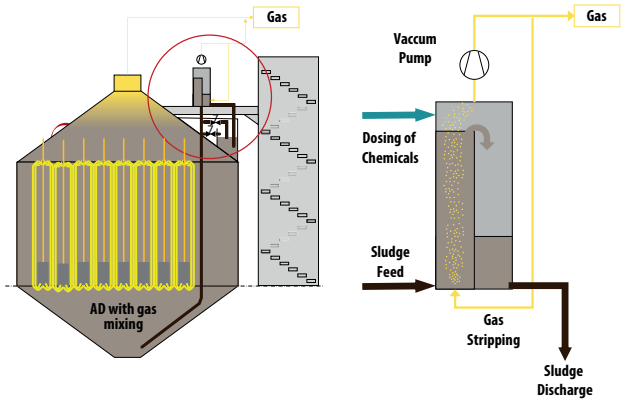
CNP CYCLES. We close loops.

CNP CYCLES watering life

Anaerobic Digestion

DePrex® Degassing

- Significant reduction of methane- and hydrogen sulfide emissions
- Higher gas yield, avoiding GHG emissions
- No outgassing during sludge dewatering
- No additional pumps required for sludge transport
- High flexibility of the system: the degassing unit can be mounted on the digestion tower or set up as a stand-alone component on the floor.



Anaerobic digestion process with gas mixing

- Can be used with any form of digester, including low-cost flat-bottom tanks
- Easy maintenance while digester remains in operation
- Long-term utilization of almost the entire digester volume and avoidance of short circuits and sand deposits
- Low energy consumption of the mixing system
- Scum layers are broken up by high turbulence
- Floating sludge is mixed into the sludge and gas production is increased
- No moving components inside the digester. Hanging lances can be pulled out of the digester without interrupting the digestion process
- Struvite formation during the digestion process does not affect the operation of the gas mixing systems as there are no moving parts inside the digester

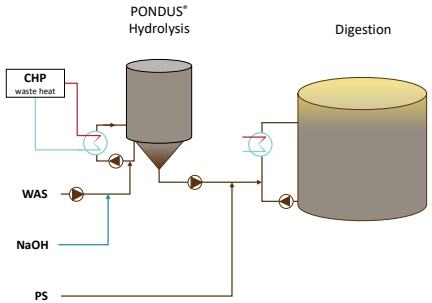
Sludge Disintegration

PONDUS®- Thermal Chemical Hydrolysis Process

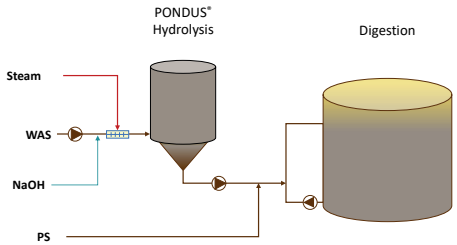
- Simple technology
- Low grade heat (60 °C to 70 °C) and caustic soda for sludge hydrolysis
- Two different energy sources for operation
- Sludge system remains under atmospheric conditions
- Biogas production increase between 20 to 35%
- Reduction of sludge quantity
- Reduction of sludge viscosity by up to 80% leading to better mixing in digester with less energy
- Reduction or elimination of digester foaming
- Low energy requirement and small footprint, realized by simple and proven equipment

Two different energy sources for operation

Heat Source: Hot Water



Heat Source: Steam



Technologies for Struvite Formation or Recovery

AirPrex® Micro Process

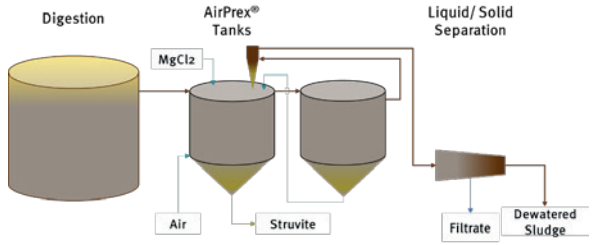
No struvite recovery => micro crystals remain in sludge.

- Increase of cake dryness up to 4%
- Less polymer consumption up to 15-25%
- Reduction of ortho-P up to 95 % in the filtrate (internal recycling)
- Reduction of scaling downstream the digester in sludge and centrate area
- Small footprint

AirPrex® Macro Process

Same benefits as AirPrex® Micro and additionally:

- Enhanced P-release in the second reactor tank
- Forming macro crystals of struvite
- Higher direct recovery rates (up to 50% of formed crystals)



LysoPhos® Process

- Patented process for P-recovery prior to digestion as struvite
- Protection of digesters and downstream pipes from struvite accumulation and scaling
- P-concentration in sludge lower than 20 g P/kg DS