Sequencing Batch Reactor (SBR)

Consistently meeting effluent discharge limits, regardless of hydraulic and organic loads variations.

A strong, dedicated, technical and operational support for all your projects.

A reliable fully automated process (SCADA/HMI display) ensuring low operational costs.

More than 30 years of experience using a scientific SBR design approach; hundreds of installations around the world.

Advanced secondary biological treatment with on-line optimisation allowing high yield process efficiency (95 to 98% pollutants removal), with a most advantageous energy consumption.

Municipal, industrial, leachate wastewater treatment plants, including retrofits.

Consistently meeting effluent discharge limits, regardless of hydraulic and organic loads variations.

A reliable fully automated process (SCADA/HMI display) ensuring low operational costs.

A strong, dedicated, technical and operational support for all your projects.

Municipal Solutions

Proven Performance

High Flexibility

High Expertise

Simple Operation

Wide range of applications

Experienced Service Team

Municipal, industrial, leachate wastewater treatment plants, including retrofits.
A Global SBR Development
Through Leading-edge Engineering

For an SBR process to surpass the performance and reliability of other biological processes on the market, the SBR design integrator must perform on-going research and development while mastering the latest developments in microbiology, process design, hydraulics and automation.

At Premier Tech Aqua (PTA), the basic SBR concept has always been a great source of inspiration to our development team. For the last decade, our company has invested in this most promising treatment concept to finally develop an extensive range of various SBR processes. This allows our clients to treat their organically contaminated wastewater.

PTA’s SBR processes were developed using innovative combinations of physical parameters, such as various reactor feed modes, with creative internal baffling. These parameters are then combined with adjusted anoxic, anaerobic, and aerobic periods, to offer a unique site-specific process for each application.

This broad design approach allows PTA to review various SBR process configurations and select the most, practical solution capable of resolving project-specific wastewater treatment conditions in the most economical manner. Finally, Ecoprocess™ SBR designs are certified for biological performance using a modern simulation platform. These bio-simulations validate all aspects of the biological treatment system and certify that the required treatment performance will be achieved.
# PTA Offers a Wide Range of Value Added Concepts to Best Suit your Application

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<th><strong>SBR</strong></th>
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<td><strong>Rapid Fill – True Batch</strong></td>
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<td><strong>Principal Applications</strong></td>
<td><strong>Rapid fill SBR</strong> promotes a much higher bacterial activity level through a full meal feed mode, it helps in enhancing selector effect resulting in good settling conditions and meeting high quality effluent requirements.</td>
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<th><strong>One batch a day SBR</strong></th>
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<td><strong>Gradual-fill one-batch a day</strong></td>
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<td>Food industries</td>
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<td><strong>Principal Applications</strong></td>
<td><strong>This particular type of SBR is designed to treat the wastewater generated during one day of operation of the industry (number of hours/day). The rest of the treatment cycle will occur when the industry is not in operation. This SBR helps in treatment of high BOD₅.</strong></td>
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<th><strong>OxiSequencer™</strong></th>
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<td><strong>Municipal (small flow)</strong></td>
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<td><strong>Package SBR</strong></td>
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<td><strong>Principal Applications</strong></td>
<td><strong>The OxiSequencer™ process has been developed to offer a more convenient solution to customers having to deal with small flow wastewater systems. The OxiSequencer™ makes use of a long solid retention primary settling tank (BioSeparator™) followed by a SBR process. In case of high hydraulic variations of the flow, partial equalization can be incorporated ahead of the SBR. Secondary sludge can be returned and stored into the BioSeparator™ unit.</strong></td>
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<th><strong>Step-feed SBR</strong></th>
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<td><strong>Partial-feed-steps</strong></td>
<td><strong>Leachate</strong></td>
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<td><strong>High ammonia and high organic toxic effluent treatment</strong></td>
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<td><strong>Principal Applications</strong></td>
<td><strong>Through accurate process design and innovative treatment cycle, PTA has developed its Step-feed SBR process capable of treating highly charged landfill leachate effluents while avoiding the bio-toxicity of high ammonia. This particular SBR process consists of a special feed mode coupled with site specific treatment sequence. The system is specially engineered to maintain all necessary biological and chemical balance to provide nitrification and denitrification. This process also allows energy saving and offers high treatment performance without the use of chemicals.</strong></td>
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</table>
The Ecoprocess™ GF-STB SBR makes use of baffled reactors and alternately feeds one at the time with 100% of the flow. This process treats the wastewater in defined batches, allowing for an aerated no-flow period before the treatment cycle is completed.

**Process description**
This no-flow period assures that the last quantity of wastewater entering the reactor will be safely treated before the sequence ends and the treated effluent is discharged.

**Features**
The GF-STB SBR includes on-line process optimization, full management of all alarms and energy saving attributes.

**Application**
This SBR configuration is an excellent process for most municipal applications. It requires more elaborate design, more equipment and more sophisticated logic controls. This is ideal for municipal projects where partial bio-P removal is desirable or for treatment of highly concentrated wastewater (municipal and industrial) where stringent effluent quality is required.

**Treatment performance**
GF-STB SBR plants treat municipal wastewater to <5 mg/L for both BOD₅ and TSS. It also provides complete nitrification and significant denitrification. The plant can also achieve bio-P reduction to <0.3 mg/L TP with chemical assistance.
Continous-fill/intermittent discharge
Municipal SBR

The Ecoprocess™ CF-ID SBR makes use of baffled reactors continuously fed from an influent splitter box or channel concept. A rectangular reactor configuration is often used to ensure there is no hydraulic short-circuiting. Wastewater enters the front end of the reactor while the treated effluent is decanted at the opposite end.

Process Description
Although the front end (pre-zone) of the reactor is mainly for hydraulic control, it also pre-treats the wastewater biologically. Further, it promotes higher performance in many ways. Influent travels from the pre-zone to the main-zone through submerged ports at the bottom of the baffle wall. The influent is already substantially treated as both sections of the reactors are aerated. During the fill-decant step, pre-treated wastewater percolates through the settled biomass in the main reactor to promote absorption of the remaining soluble organics.

Features
The process controls are not as sophisticated as for a CF-ID SBR. They include standard Ecoprocess™ SBR features such as on-line process optimization, full alarm management and energy saving attributes.

Application
Ideal for municipal applications where secondary treatment may be desirable, such as improved BOD₅ reduction, nitrification and partial denitrification.

Treatment Performance
CF-ID SBR plants treat medium strength municipal wastewater to <5 mg/L BOD₅ and TSS while providing complete nitrification and substantial denitrification.
The Most Robust, Reliable and Passive Floating Decanter

All Ecoprocess™ SBR plants include our highly reliable surface decanter. The design was developed in the early 90’s by our IR&D team. The SwingCanter™ has proven its reliability through numerous installations and has been evaluated and selected by many engineers for its superior construction features and flexible operation.

The innovative features you’ve been looking for

- Non-mechanical (passive) surface floating concept;
- Heavy duty stainless steel construction;
- Robust structural knee-joint concept resistant to torsional and lateral forces while providing optimal angular operation over a large span;
- PosiAir™ solids-exclusion system using simple-air cushion operation, eliminating the need for submerged mechanical valves;
- Standard concept using a motorized valve located outside the reactors for easy maintenance. A valve-less configuration is also available;
- Full-depth decanting possible since no spring-loaded valves are used to provide solids exclusion;
- Highly reliable and maintenance-free equipment.
Being an automated process, the Ecoprocess™ SBR clearly requires leading-edge programming to operate without failure and to manage all alarms. The station must meet effluent requirements no matter what goes awry in the plant (including equipment and power failure) without requiring a permanent presence or intervention of an operator.

**PTA features a comprehensive and operator-friendly supervisory control and data acquisition (SCADA) system**

PTA is made of a multidisciplinary, experienced team with advanced knowledge in process engineering and control software programming. The team manages all mechanical and electrical aspects of the SBR stations.

Our software programs are the core of our technology. They are developed in-house by our experts and are supported by the same team. Electrical concepts are established within a well-defined architecture to assure quality product that can be easily serviced and/or modified.

Most of our SBR stations are provided with our SCADA system. This is a major asset for the client and an immeasurable tool for the operator. The SCADA system monitors and edits all defined parameters within the plant and is ideal for communications and service liaison with PTA service team. Control panels and SBR software programs are duly tested prior to shipping using a unique program simulator operating in accelerated mode in order to test the totality of the program. Hence, only minor (if any) adjustments may be required during the start-up period.

Our SBR stations are typically equipped with all necessary software and hardware to enable easy and direct support via the Internet.

As an option, PTA also offers a local/remote operating system. At the heart is a “PLC-Laptop-Beeper-Modem” to increase work efficiency and save operator’s time. This state-of-the-art control system asserts that customers will be fully satisfied with a SBR process designed, supplied, commissioned, and monitored by PTA.
The strength of Premier Tech Aqua

Since 1923, Premier Tech has been building its know-how and reputation on the diversity and technological expertise of its 2,000 team members located all around the world. As one of Premier Tech’s business units for over 20 years, Premier Tech Aqua (PTA) has become an international leader in the field of onsite and decentralized wastewater treatment technologies for the residential, commercial, community, and industrial sectors. With over 45,000 installations, each coupled with a rigorous inspection, maintenance and documented follow-up program performed by a large network of partners, PTA is undoubtedly one of the leaders in its industry. Active in North America, Europe and Asia, PTA is proud of the quality, performance, and reliability of its solution offering.

- Over 45,000 Ecoflo® installations
- Over 100,000 peripheral products sold
- Over 900 project referrals in commercial, communal, institutional, municipal and industrial applications
- Documented system traceability, inspection, maintenance, and follow-up
- More than 2,500 partners
- Team of 25 experts entirely dedicated to IR&D
- Presence in North America, Europe and Asia
- Treatment performance surpassing regulatory requirements

ALL THAT YOU NEED!
The toolbox for wastewater professionals

Register

ptzone.premiertechquaqua.com

The information contained in this document is based upon the latest information available at the time of publication and is designed to provide you with a general introduction to our products. We make no warranties or representations as to its accuracy. We are continually updating and improving our products and reserve the right to amend, discontinue, alter or change specifications and prices without prior notice.

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