

INDION® Sequential Batch Reactor (SBR)

INDION Sequential Batch Reactor (SBR) is a cyclic activated sludge treatment system. Its compact design is based on sequential time cycle for aeration, settling and clarification which provides several advantages over conventional activated sludge processes.

Operating Principle

The steps involved in SBR are:-

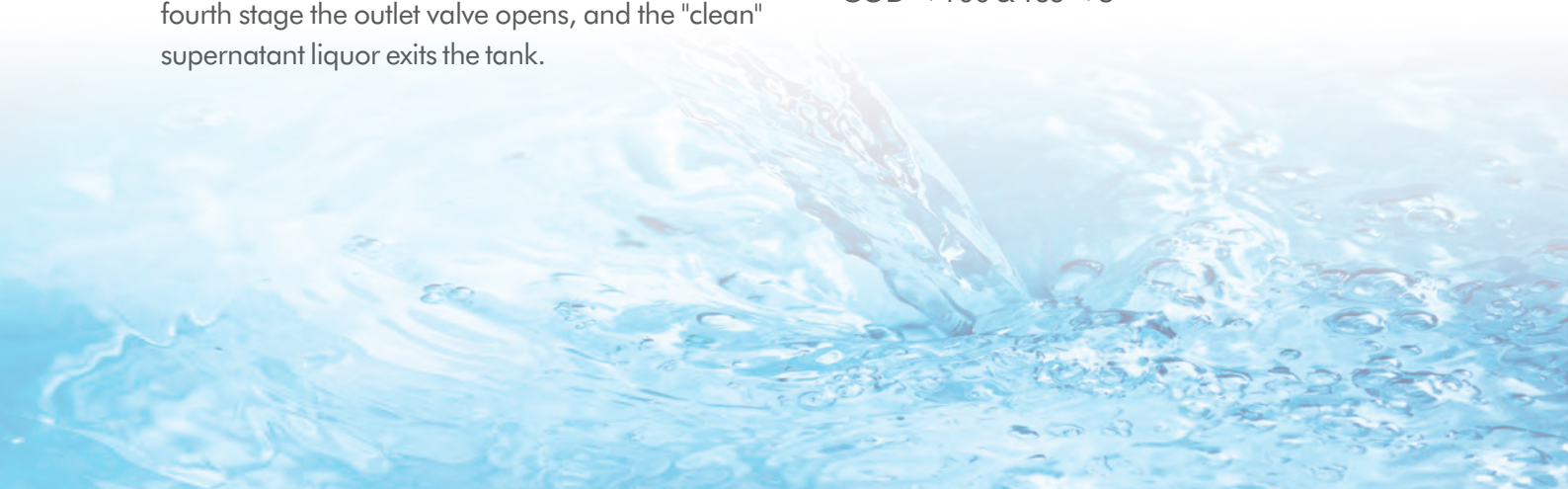
- **Fill (Cycle time: total 3 hours):** The inlet valve opens and the tank is filled with raw wastewater. During static fill, the blower is shut and mixers are kept on, creating anoxic conditions. During the aerated fill, mixing is provided through a blower (air).
- **React (aeration) (Cycle time: 1 hour):** Aeration of the mixed liquor is performed during the second stage using mechanical aerators or transferring air into fine bubble diffusers fixed to the floor of the tank (diffused aeration system). BOD removal and nitrification process take place during the react cycle.
- **Settle (sedimentation/clarification) (Cycle time: 1 hour):** No aeration or mixing is provided in the third stage, in which settling of suspended solids starts.
- **Draw (decant) (Cycle time: 1 hour):** During the fourth stage the outlet valve opens, and the "clean" supernatant liquor exits the tank.



INDION SBR system is available as 1 or 2 tank design in which all cycles occur simultaneously for each batch. Each batch has a cycle time of 6 hours, in which raw sewage gets treated completely. INDION SBR systems are designed to reduce ammoniacal nitrogen along with BOD, COD, Total Suspended Solids (TSS) & Turbidity.

Advantages

- No moving parts
- Processes like nitrification, organic matter removal, settling or clarification are carried out sequentially in a tank
- Small footprint, as clarifier is not required
- Flow fluctuation does not affect system output
- Treated effluent is of highest quality BOD < 10, COD < 100 & TSS < 5



Applications

INDION SBR delivers treated water with quality far better than local discharge norms. Ideal for housing complexes, hotels, commercial complexes, industries and institutes (IT parks, hospitals & malls).

The treated water can be discharged or used for cooling tower make-up, gardening, toilet flushing and other low-end applications after suitable post treatment or disinfection.



Treated Water Characteristics

Parameters	Raw Sewage (mg/l)	Outlet (mg/l) (After SBR, Chlorination & Filters)
pH	6 to 8	7 to 8
Total Suspended Solids	150 to 250	<10
Total Oil (Free oil)	100	<20
Chemical Oxygen Demand (COD)	500	<100
Biological Oxygen Demand (BOD)	350	<10
NH-N	40	<5
TN	50	<10

Models are available from 50 KLD to 600 KLD. Single tank design till 200 KLD and two tank design from 300 KLD to 600 KLD.

To the best of our knowledge, the information contained in this publication is accurate. Ion Exchange (India) Ltd. maintains a policy of continuous development and reserves the right to amend the information given herein without notice. Please contact our regional / branch offices for current product specifications.

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