REACTO™

A technovative solution for SBR based decentralized **Sewage Treatment**

Technovation by :

awatech

transforming technologies

www.reacto.in

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Transforming Technologies

AWATECH, founded in September, 2011; is a company with functional expertise who work on strategy ; efficiency and technological innovations based on local conditions and customer requirements.

We help our clients with their most complex urban environmental regulatory challenges by building tailored solutions at the most affordable capital as well as operational costs.

Our mission is to operate consistently, allowing our clients to improve their community's health and safety by providing them innovative and brave solutions based on our industry knowledge and key business strategies

We Deliver :

AWATECH helps customers through sector leading Technology Solutions and Support Services.

REACTO Packaged Plants : REACTO – Modular Decentralized Sewage Treatment Plant Exclusively designed for BOD and Nutrient Removal along with clarification, tertiary filtration and disinfaction.

AquaSBR* - True Batch Reactor Technology; most relevant to small and large scale municipal and industrial waste water application. It is optimized with AWATECH's smart PLC/HMI based control system

AquaDDM* Direct Drive Mixer for maximum waste water mixing when mixing requirements are the controlling factor. It can reduce power costs while delivering 3-4 times mixing of any other aerator of same size

AquaPrime* - Designed as an economical and efficient solution for the primary treatment of waste water.

AquaPASS2* - Phased Activated Sludge System. It is a combination of sequencing batch reactor technology with traditional flow-through activated sludge process to produce a low cost, compact and continuous flow system

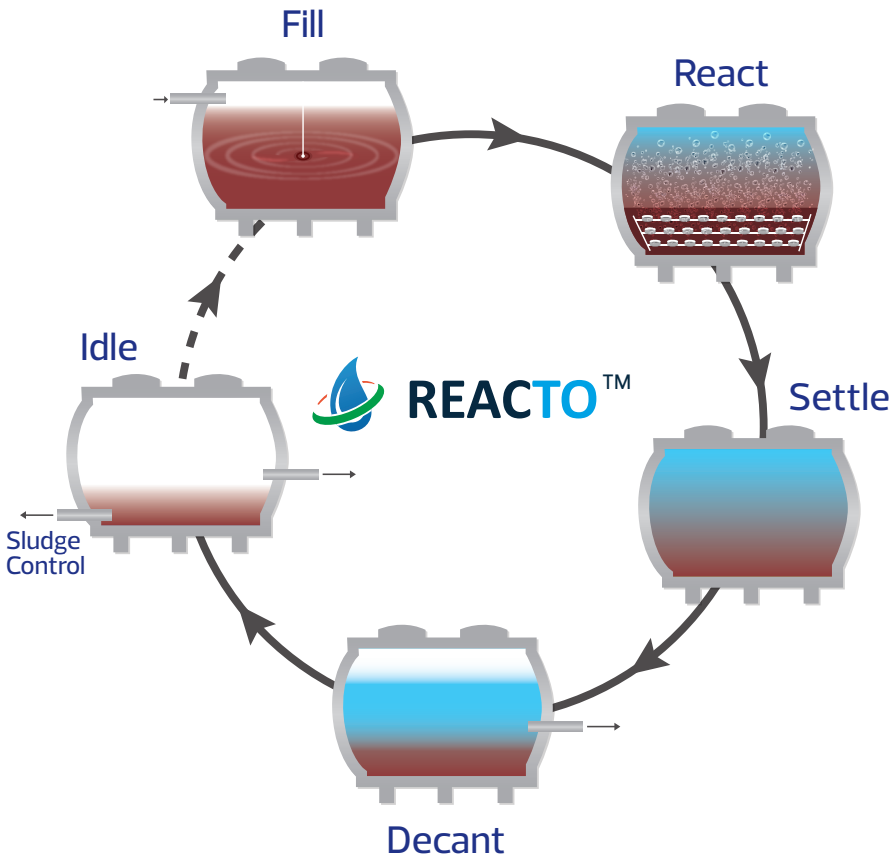
Cloth Media Filter with our exclusive OptiFiber Technology

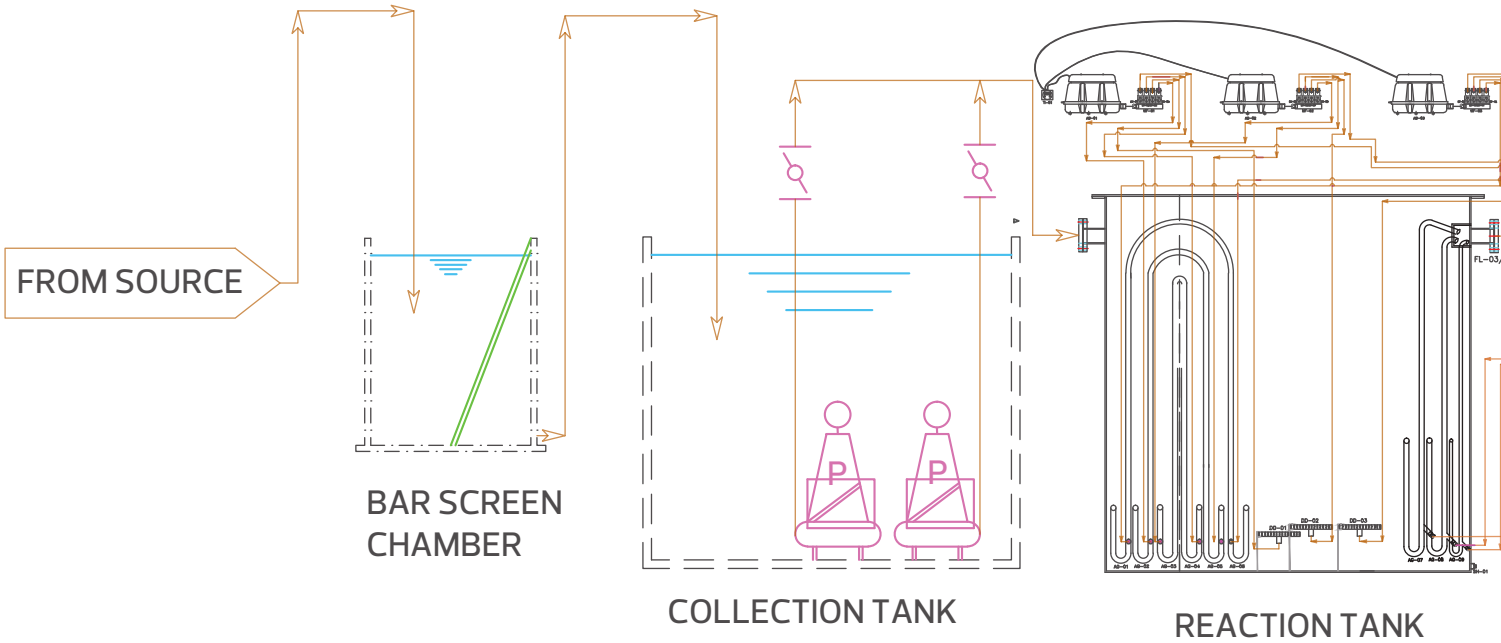
AquaElectrOzone*- Ozone Generation System for water and WasteWater treatment plants.

AWAOCS – Odor Control System. A customized ultimate solution to Control Odor especially at Sewage Pumping Stations and Sewage Treatment Plants based on Bio Trickling Filtration process

REACTO™ SBR Process

REACTO's treatment process is a unique combination of ASP and SBR. It is a time sequencing batch process, wherein all biological water treatment phases occurs in a single tank – called REACTO Tank. Process takes place in cycles of different phases; the entire system is optimized with suitable number of cycles depending upon the flow of the wastewater and conditions at the process site.





Process Flow Diagram

FILL

- Wastewater is taken into the REACTO tank in quick yet controlled method so as to keep the optimized F/M ratio as described on CPHEEO Manual. It is sometimes mixed via aeration devices to enhance the Anoxic process depending on the quality of wastewater and user conditions.

REACT

- The REACTO basin is aerated, allowing oxidation and nitrification to occur. Microorganisms present in the system consume organic impurities and ultimately removes BOD and Biological Nutrients.

SETTLE

- Aeration and mixing are suspended allowing solids to settle at the bottom of the basin. Results in the clear treated effluent above settled sludge.

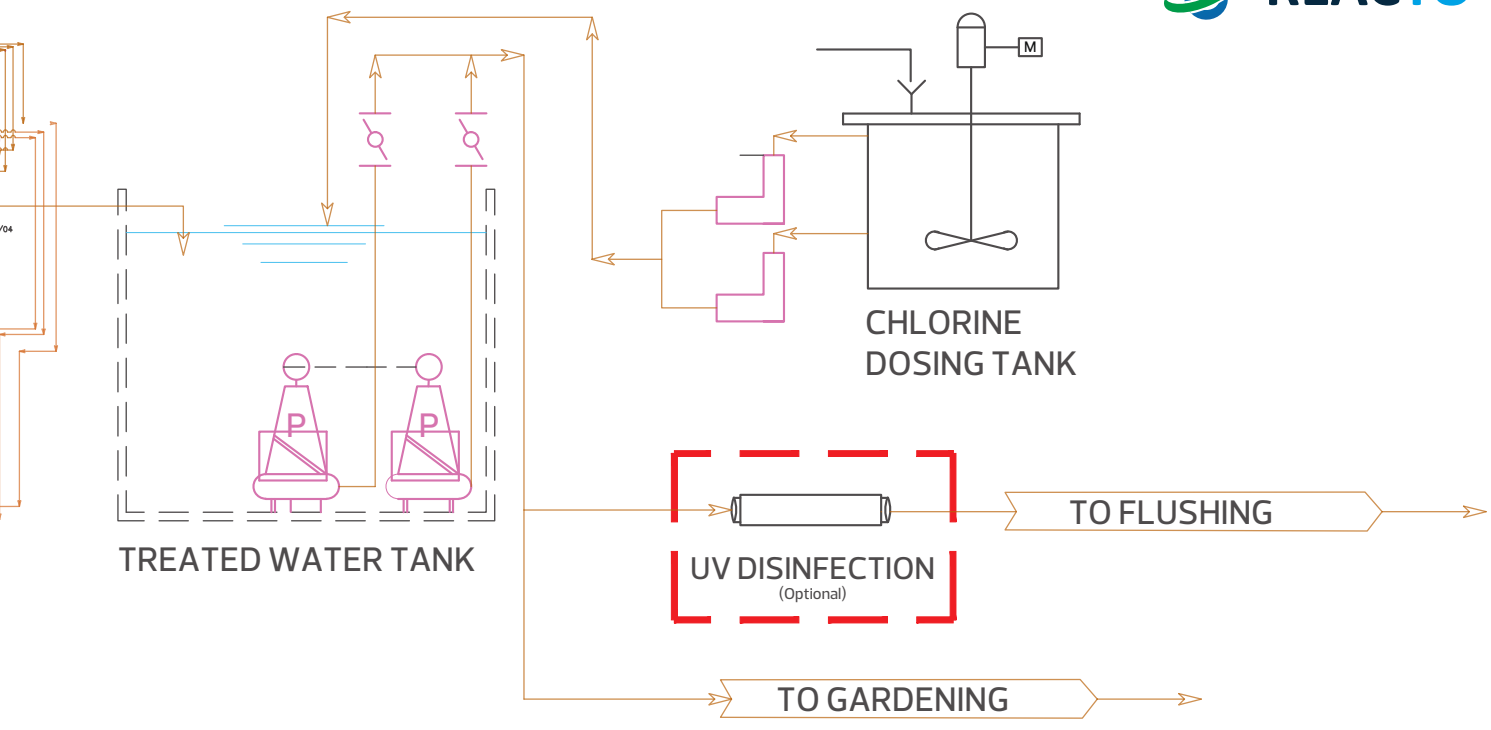
DECANT

- A specially designed decanting system draws out the treated wastewater without agitating settled sludge in order to maintain low levels of TSS (Total Suspended Solids) in effluent

IDLE (SLUDGE CONTROL)

- System remains idle during this phase waiting for the next cycle to commence. It is typical of this phase that excess sludge is wasted periodically and MLSS as well as MCRT are adjusted during this phase.

REACTO™



Control Parameters

REACTO wastewater treatment system is following internationally acclaimed ANSI -350 norms set by American National Standard Institute while maintaining output norms set by MoEF (Ministry of Environment and Forests) via CPCB (Central Pollution Control Board) of GoI.

Parameter	Unit	Influent (Raw)	Effluent (Output)
pH	-	6.0 to 8.5	6.5 to 8.5
BOD_5	mg/L	225	≤ 10
COD	mg/L	400	≤ 50
TSS (Total Suspended Solids)	mg/L	350	≤ 20
TN (Total Nitrogen)	mg/L	--	≤ 10
TP (Total Phosphorus)	mg/L	5	≤ 2
Bacteriological Count	CFU/ml	≤ 10^6	≤ 10^2

REACTO™ Control Logic

The entire REACTO process is controlled by its specially designed and programmed PLC (Programmable Logical Controller) based on HMI (Human Machine Interface). It is fully automatic, yet user friendly and flexible to varied user conditions. It is -

- Capable of automatically adjusting number of batches based on flow of wastewater.
- The PLC also monitors and controls all other equipment like valves, blower, pumps etc.
- Control Logic of the main program is affected affected through a chain of quick and decisive set of instructions based on series of continuous inputs from in-situ plant instrumentation.

REACTO™ SBR Model list

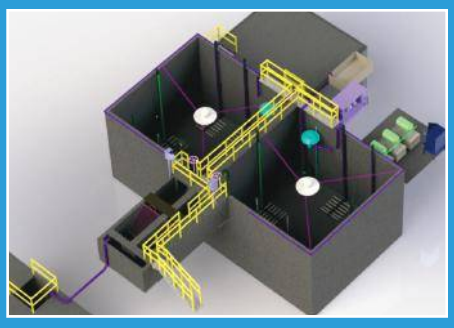
Reacto Product Code	Capacity (KLD)	Reacto Tank Type	Approx. Foot Print (Sq. Mtr.)	Power Consumption / Day (KW)	Person Equivalent (@108 LPCD)
SBR-5	5	HOPE - Vertical	8	4.99	46
SBR - 10	10	HOPE - Vertical	10	7.32	93
SBR - 15	15	HOPE - Vertical	12	11.4	139
SBR - 20	20	HOPE - Vertical	15	11.3	185
SBR -25	25	HOPE - Vertical	16	11.83	231
SBR - 30	30	HOPE - Vertical	20	15.51	278
SBR - 50	50	HOPE - Vertical	40	27.6	463
SBR - 75	75	HOPE - Vertical	60	26.99	694
SBR - 100	100	HOPE - Vertical	90	59.4	926
SBR -150	150	HOPE - Vertical	130	72.1	1389
SBR - 200	200	HOPE - Vertical	170	107	1852
SBR -250	250	HOPE - Vertical	220	126	2315

REACTO™

Nil or minimum civil construction
Easy and Quick to Install with Low O&M Cost
Fully Automatic with Web Based Online Monitoring System
Energy efficient with Less sludge generation
Less treatment cost / KLD (Kilo liters per day)
Simultaneous Nitrogen & Phosphorus (BN) removal with BOD removal
Effluent compliance with stringent parameters set by Pollution controlling bodies worldwide.
In-built Sludge Treatment
Minimum Turn Around Time
Sludge generated can be converted into the compost which can be used as a Fertilizer
Recycled Water can be effectively used for Horticulture and Gardening,
Floor Cleaning, Vehicle Washing, Irrigation, Construction, Flushing and other purposes.

REACTO™ Installations

REACTO™ in RCC Structure



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