



Agravarti
Process engineering to enrich life

AGRAVARTI

Welcome...

ABOUT

"Over a decade of expertise as an EPC contractor we Agravarti, serves industries to rightly select the most economical water treatment solutions for their requirement of process water.

Industries gain competitive advantage by utilising our services as our offerings help industries to reduce wastage of water and energy consumption. Adequate plant automation ensures safety and user-friendly plant operation. This results in savings accrued and industries to be environmentally qualified.

We are committed to provide water solutions for well-being of humanity with an aim to be admired for people, performance and long term partnership with all."

VISION

To be most respected organisation globally, offering sustainable solutions for green environment.

MISSION

- We strive to contribute substantially to the global priority areas of environment protection and enrichment of life.
- Develop and deliver cost-effective, reliable solutions that will maximise prosperity of our customers.
- We exist to fulfil needs of our customers - before and after sales through our teamwork.



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QUALITY POLICY

Our quality policy focuses on the Customer as a focal point.

We strive for "Excellence" by:

- Understanding the customer's requirements and providing customized solutions to meet those requirements.
- Continually improving systems and processes to ensure quality at every stage with the help of Quality Management Systems.
- Accomplishing commitments on delivery and service, before and after sales through our teamwork.

bsi.
Statement of Compliance
Agravarti Process Engineers Pvt. Ltd

The system established by Agravarti Process Engineers Pvt. Ltd. has been assessed from September 2013 to March 2017 by British Standards Institution (BSI) for Programmes of Professional Services based on various aspects of Business Sustainability.

We confirm that the system established conforms to the requirements of Programmes of Professional Services (PPS) and has been certified under "Level 2" Category of Green Programmes of Professional Services.

Our Sustainability and Compliance is certified under the ISO 26000 Standard Roadmarks.

Programmes of Professional Services (PPS) covers below aspects for "Business Sustainability":

1. Legal compliance
2. Environmental
3. Worker and health and safety management
4. Waste management
5. Energy and climate change management
6. Safety considerations

Phase: Initial
Valid Until: 31 March 2017
Expires: 30 March 2019

MEMBRANE SEPARATION PLANTS



Membrane separation is a safe, efficient, cost-effective process of water filtration and an environment-friendly purification with a minimal use of chemicals.

These are semi-permeable membranes that effectively removes dissolved, suspended solids and bacteria from water.

■ MICRO FILTRATION PLANTS

Microfiltration removes particles in the range of approximately 0.1 to 1 micron. Effective in removal of bacteria, flocculated materials, TSS & large colloids. However macro-molecules and dissolved solids pass through the MF membrane. Transmembrane pressure are typically 10 psi (0.7 Bar).

■ ULTRA FILTRATION PLANTS

Ultra-filtration provides separation of particles up to 0.1 micron. All dissolved salts and smaller molecules pass through the membrane. Item rejected by the membrane includes colloids, proteins micro biological contaminants and large organic molecules. Transmembrane pressure are typically 1 to 7 Bar.

■ NANO FILTRATION PLANTS

Nanofiltration refers to a speciality membrane process which rejects particles in the approximate size range of 1 nanometer. Applications include removal of colour and total organic carbon (TOC) from surface water, removal of hardness, overall reduction of total dissolved solids (TDS),

■ REVERSE OSMOSIS PLANTS

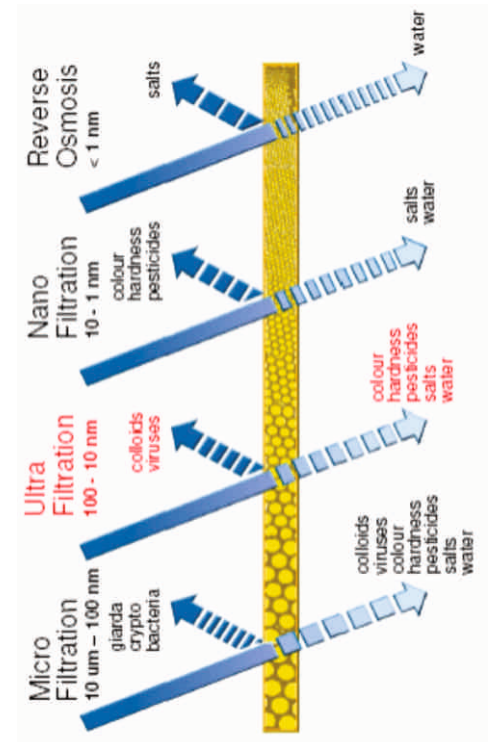
Reverse osmosis is the finest level of filtration available. It is The RO membrane acts as a barrier to all dissolved salts and inorganic molecules, as well as organic molecules. Transmembrane pressure are typically 5 Bar for brackish water to greater than 84 Bar for sea water. We offer a whole range of Reverse Osmosis plants exclusively constructed by installing spiral wound membranes technology.

■ REMOTE MONITORED RO SYSTEMS

To increase operational efficiency and enable better plant management, we offer remote monitored RO systems, which allow real-time monitoring of parameters from a remote location.

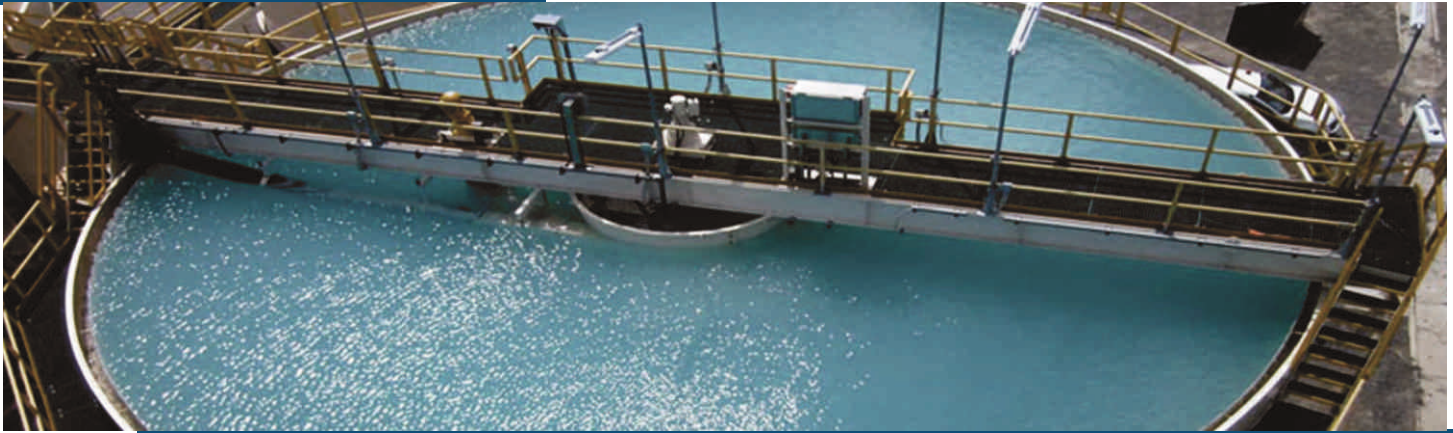
Why Remote Monitoring?

- Plant operational data automatically gets logged.
- Multiple plants can be monitored at one place.
- Helps to carry out protective maintenance in time and avoid plant break down
- Enhance work efficiency and eliminate time loss



Ranges of filtration process

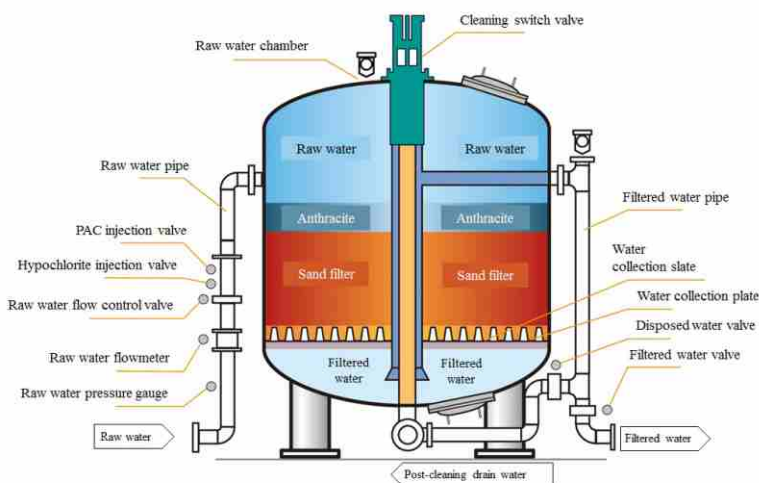
PRE-TREATMENT PLANTS



The objective of pre-treatment process is to improve the quality of feed water. It is done prior to the main process to protect the more sensitive downstream process units whose efficiency may be severely affected by untreated raw water. We offer a wide range of pre-treatment plants that make the feed water suitable for downstream processes and operations our range of pre-treatment plants comprises ...

- Clarifiers & Flocculator
- Tube Settler
- High Rate Solid Contact Clarifier (HRSCC)
- Lamella Clarifiers

FILTRATION SYSTEMS



Filtration systems are employed to remove minute particles from the feed water through fine physical barriers.

Our extensive range of filtration systems is designed to cater varied requirements. We offer manual automatic and remotely operated systems. The systems offered in different MOC like FRP, MS, MSRL or stainless steel construction suitable to the application requirement. our comprehensive range of filtration system consists ...

■ DUAL MEDIA FILTER / PRESSURE SAND FILTER

These filters use depth filtration technique to remove turbidity and minute suspended solids from feed water. We offer high performance dual media filters using quartz-grade sand and anthracite as the principal filtration media supported by pebbles of various sizes, silex and crushed gravel to filter out the turbidity and suspended solids. These filters employ bed of anthracite at the first level where initial coarse filtration is done, followed by a sand bed filter that provides twice the dirt-holding capacity achieving high performance.

■ ACTIVATED CARBON FILTER

The activated carbon filters are used to remove organic contaminants from water by adsorption. The principle media - activated carbon, is an extremely porous media that adsorbs organic colloids often present in raw water, thereby rendering it odour-free and also helps removal of colour. Other supporting filtering media include pebbles of various sizes, crushed gravel and silex. We offer activated carbon with iodine value of 450, 600, 900 and 1200.

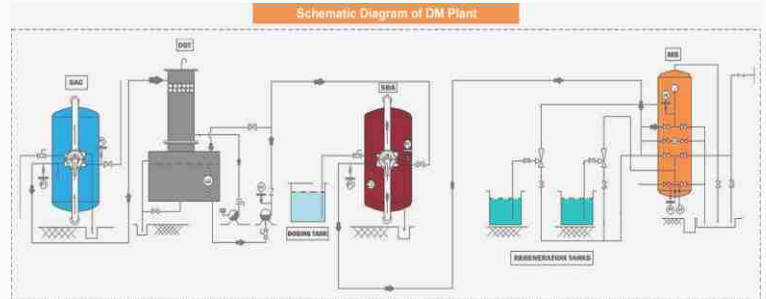
■ IRON REMOVAL FILTER

Our advanced iron removal filters effectively remove iron from the feed water. These filters employ manganese dioxide as the principal media supported by pebbles of various sizes, crushed gravel and silex. Manganese dioxide, which is a strong oxidizing agent, helps in catalyzing the precipitation of iron in water and subsequently traps the precipitated iron in the filter bed.

ION EXCHANGE SYSTEMS

A variety of industrial applications require feed water free of salts and specific ions, for which they employ the ion-exchange water treatment system. It removes organic and inorganic contaminants in surface and groundwater through ion exchange resin bed.

Our comprehensive range of these systems includes softening plants, demineralization plants, mixed bed etc., available as fully automatic, remotely operated, manually operated or with multiport valves in different MOC like FRP, MS, MSRL and SS.



■ SOFTENERS

Softening solutions replace calcium and magnesium ions with sodium to produce softened water, thus eliminating residues and scaling completely.

■ DM PLANT AND MIXED BED PLANT

Demineralization (DM) and Mixed Bed plants are used for the reduction of Total Dissolved Solids (TDS) to required levels. Our advanced DM and Mixed Bed plants replace the impurities with hydrogen and hydroxyl ions to produce extremely pure water.

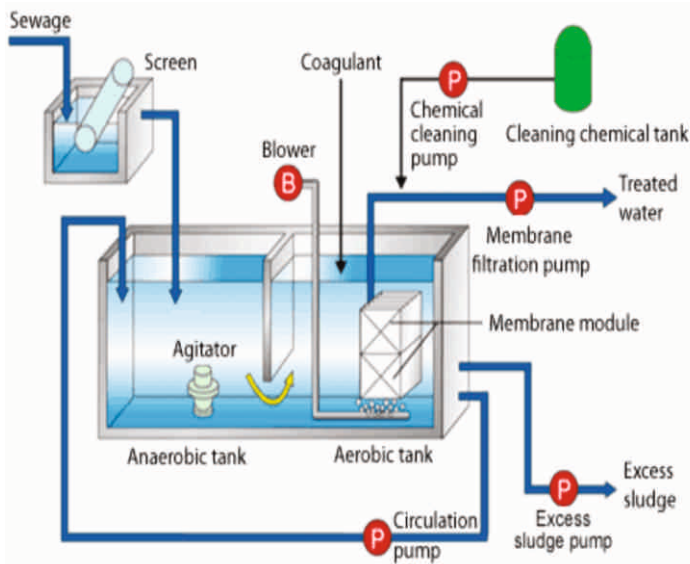
■ CONDENSATE POLISHING UNIT

Condensate polisher is employed to filter condensed water from steam as part of the steam cycle through ion exchange resins that capture corrosion products in condensate steam. Our contemporary condensate polishing units effectively trap potentially corrosive ions, remove traces of dissolved minerals and suspended matter from the condensate stream.

SEWAGE TREATMENT PLANTS

Sewage Treatment Plants are used to treat the wastewater received from domestic, commercial and industrial sources, by removing toxic materials that may otherwise cause serious damage to the environment. The system outlet is an environmentally safe treated stream; which can either be re-used for many applications or drained into sewer without causing damage to the environment.

We offers sewage treatment plants that clean the wastewater using advanced technology based processes such as...



■ MOVING BED BIO REACTOR (MBBR)

The MBBR system is a biofilm process which is economical solution for treating the waste water . This requires less foot print area over conventional system as well as more cost-effective with minimum maintenance.

■ SEQUENCING BATCH REACTOR (SBR)

The SBR is a type of activated sludge process for the treatment of wastewater. SBR reactors treat wastewater such as sewage or output from anaerobic digesters. The complete process takes place in a single reactor, within which all biological treatment steps take place sequentially

■ MEMBRANE BIO REACTOR (MBR)

The MBR is the combination of a membrane process like microfiltration or ultrafiltration with a suspended growth bioreactor, and is now widely used for municipal and industrial wastewater treatment.

EFFLUENT TREATMENT PLANTS



Industrial wastewater treatment covers the mechanisms and processes used to treat wastewater that is produced as a by-product of industrial or commercial activities. After treatment, the treated industrial wastewater (or effluent) to be essentially reused or safely disposed to environment. Most industries produce some wastewater although recent trends in the developed world have been to minimise such production or recycle such wastewater within the production process itself.

There has been a technological shift towards streamlined systems and processes, which has widened the range of environmental protection possibilities. The ecological focus is now on the preservation of water and multiple uses of wastewater. Effluent treatment plants are designed to treat the effluent coming from various sources that may otherwise be toxic / hazardous for the environment.

Industrial wastewater itself contains a diversity of impurities, requiring special treatment process. The treatment of different effluents varies with the type of effluent and therefore constitutes different tasks consisting of mechanical, biological, chemical and physical processes.

We offer an exhaustive range of effluent treatment plants that efficiently purify the effluent using following processes:

- Aerobic Biological Process
- Anaerobic Biological Process
- Chemical Physical Process

Benefits

- To clean industry effluent and recycle it for further use.
- To reduce the usage of freshwater and minimise expenses.
- To meet the standards for emission or discharge of environmental pollutants from various Industries set by the government.
- To safeguard environment against pollution and contribute in sustainable development.

APPLICATION AREAS

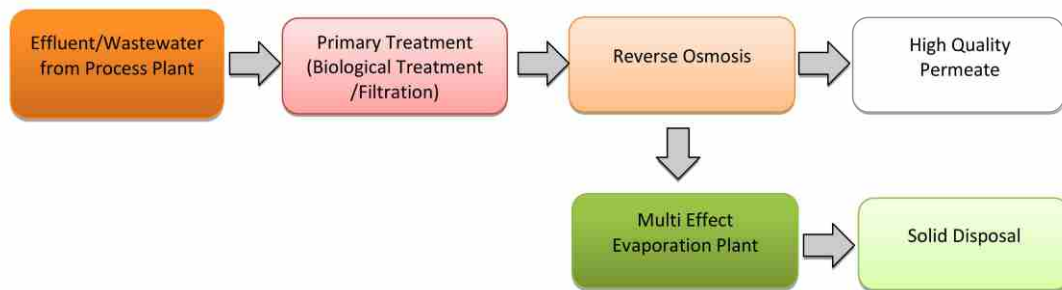
- FOOD & BEVERAGE
- CHEMICAL
- FERTILIZER
- TEXTILE
- HOTEL & HOSPITALITY
- CEMENT
- STEEL
- DISTILLERY

ZERO LIQUID DISCHARGE

Increasingly, legislation and industry demands that no liquid effluents are either to be discharged or stored. In the case of inorganic effluents, the final product is usually a mixed salt and of no commercial value. In the case of organic effluents, the concentrate could be a liquid or 'sludge' and be viscous in nature. The key objective however is to select the optimal process, balancing capital expenditure with minimisation of operating costs.

Zero liquid discharge is a water treatment process that is beneficial to industrial and municipal organizations and most importantly to the environment as it ends with no effluent or any discharge. It employs the most advanced wastewater treatment technologies to purify and recycle virtually all of the wastewater produced.

It includes pre-treatment and evaporation of the industrial effluent until the dissolved solids precipitate as crystals. These crystals can be used in fertiliser industry or can be used for land filling. The water vapours from evaporation is condensed and returned to the process.



- PHARMACEUTICAL • PAPER & PULP • SUGAR • POWER • MUNICIPAL • AUTOMOBILE
- MINING • OIL & GAS • INFRASTRUCTURE • DAIRY



Agravarti

Agravarti Process Engineers Pvt. Ltd.

D-III block, 32/3 MIDC- Chinchwad,
Mohan Nagar, Pune - 411 019,
Landline: 020 6410 5387, 6529 9455

mktg@agravarti.net, sales@agravarti.net

www.agravarti.net