

# Dae San Engineering

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## Introduction

### The spirits of company is “ Delightful environmental creation”

As Daesan engineering is aim to zero of environmental contamination, we are continuously trying to do their best to creat delightful environmental creation as construction company who completely prevents from any contaminations like air pollution, odor, noisy, waste water treatment and so on. With providing renovated products by extremely pointed equipment and leading technology, we can come true no contaminated, clean and the ideal natural environment. With the spirits of company “delightful environmental creation”, we commit that we will be one of the best environmental treatment company in Korea.

## R & D for New Technology

Fresh air! Clean water!  
In order to turn over  
delightful nature to our  
future generations, our  
engineering specialists are  
doing our best.

In order to conserve the earth where not only today's generation but also descendants of future can enjoy their good life, the enterprise has to be a social commit and duty not to contaminate the environment by action of management.

Daesan pursues green nature and delightful environment, we are continuously to trying to do our best for the conservation of environment as mission Also, we are trying to do higher and diversity of environmental technology about a dust collector, pure water treatment, reverse osmosis, industrial waste water treatment, metropolitan sewage treatment, clarifier and so on, and trying to do our best for developing the production system which is more confidence by overall research.

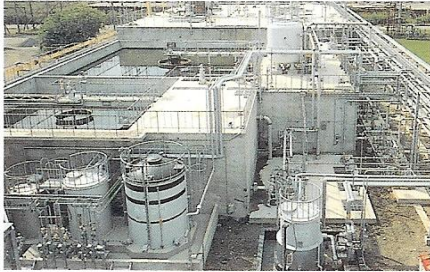


### The status for each new technology of research development

- **G-7 Environmental Engineering Technology Development**----(KIST): Overall treatment system for strict degradation of waste water
- **Industrial University Reserch Technology Development Consortium**----(Gyungbuk University): Clay adsorption agent for removing toxic organic material
- **Industrial University Reserch Technology Development Consortium**---(Gyungseong University Environmental Reserch): New engineering waste water treatment for food process by anaerobic fixed phase
- **Company Technology Development**----(Technical department): Regarding to ozonic treatment system for waste water of dying, paint spray booth and paper process
- **Company Technology Development**----(Technical department): Regarding to research to remove and recycle system for volatile organic compound in dryer for printing and paint spray process



# Industrial Waste Water



## Petrochemical Waste water treatment

Due to petrochemical is complicated and various process, waste water treatment should treat overall after equalization of water by the first treating for each unit process. There utilize activating sludge method for waste water which including synthetic and chemical compound.



## D.S.A.S

- DSAS differs from aerobic treatment, it treats to decompose and remove organic compound by utilizing organic acid bacteria and methane bacteria from highly concentrated organic waste water, and it apply to treatment of highly concentrated organic waste water, and there is no need of oxygen but generating methane gas can use it as energy.
- This method also differs from conventional anaerobic digestion basin, it's effectiveness for treatment is increased by using fixed phase of filling agent, also equipment cost is lower and operating cost is lower.



## Ozonic treatment method (O3 treatment)

- Ozone is strong oxidizer to decompose organic and inorganic compound, specially is highly economical to re-use waste water and to treat with high technology.
- Ozone is strong biocide, and more 300 times strong than chlorine.
- Ozone does have any secondary toxic material
- Ozone has more filtering effectiveness to get coagulation of SS from waste water.
- Application: Potable water treatment, Water treatment, Disinfection, Sewage, Industrial waste water, Odor, Night soil, CN, Phenol treatment



## Bio-Reactor System

- There is no corrosion by decomposing with residual BOD due to excellent treatment water in sanitization and anti-bio properties.
- There is no odor from sludge by remove odor material at 100%
- Less installation area at 20 to 50%
- Can reduce 20 to 40% of excess sludge, excellent effectiveness of sedimentation and prevent from bulking
- Application: Highly concentrated waste water of food process, Sewage, Night soil, Livestock raising and Industrial process

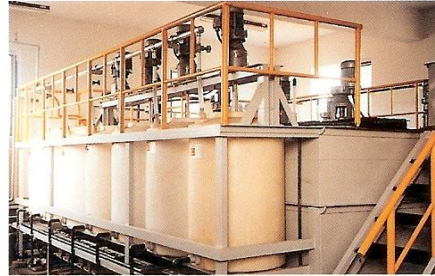


# Industrial waste water treatment

## Metal & metal plating waste water treatment

There are electric metal plating, hot dip galvanizing, zinc phosphate pretreatment, and alkali treating in metal process.

There should be no toxic by complete treatment for waste water of heavy metal. We solve easily the difficulty of treatment for waste water of metal and metal plating process.



## Food process waste water treatment

Waste water of food process is various changed to flow and concentration by season so that there are a lot of odor in the water, and it is very important to be treated the water stably.

We can apply various treatment methods according to waste water types and flow change so that it can be solved some problem which has in waste water of food process. Also, we are applying many years experience of know-how as D.S.A.S or Bio-reactor and so on to waste water system.



## Textile & dyeing waste water treatment

– Waste water for textile and dyeing process industry is a various quality by product type. There needs bio-treatment system essentially, applies chemical treatment and high technology treatment in this waste water. We are trying to reduce unit cost through optimum selection of system.

– Counter vertical type of floating basin which Daesan invented and is proud of its compact, less operation cost, stable water quality and perfect design.

## Pulp & paper waste water treatment

The waste water where in paper manufacture is using a lot of industrial water includes the 1st treatment by chemical reaction and the 2nd treatment by activated sludge (ONI) method so that it maintains high treatment effectiveness. Also, treated waste water can be reuse water to paper industry so that it contributes to cost reduction and load reduction for contamination of water quality in river.

Ozonic treatment method which is excellent to remove color and slime can develop to no discharge water system and quality of discharge water positively.



# Metropolitan Sewage Treatment / Purified water Treatment

## Metropolitan Sewage Treatment

Water treatment equipment is composed with sand filter to remove sand and soil, with bio-treatment basin to reduce BOD, with sediment equipment to sink activating sludge and with disinfection equipment to remove toxic material and colon bacillus. Sludge (ONI) treatment equipment which concentrates sludge from sediment is composed with digestion equipment which is generated methane gas(CH<sub>4</sub>) from concentrated sludge and with dehydration equipment which is reduced water content of sludge.

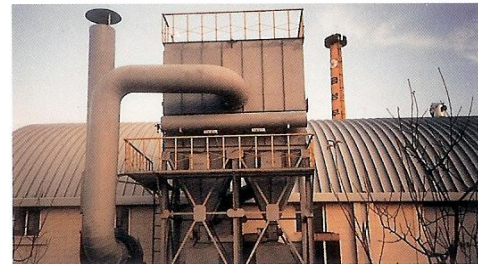
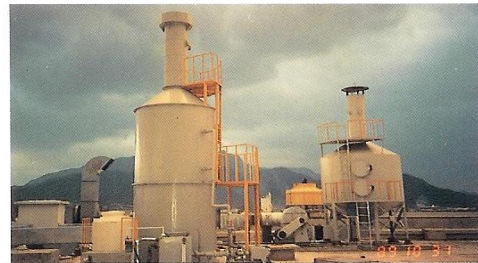


## Purified water Treatment

Industrial water is main element for industrial action as much as need in all industries. But, the lack of this industrial water can be pressured a big burden to company owners. The effective cooling water supplying system is essential equipment to reduce unit cost and to improve competition in iron and steel manufacture which consume a large industrial water specially. Daesan is perfectly carrying out the engineering, manufacturing and initial operating for cooling water supplying system which can recycle after removing oil and scale from used industrial water. And Daesan is recognized one of the best water treatment company which providing the equipment in Korea.



# Prevention equipment for air pollution



## Wet cleaning equipment

- Feature:**
- Highly effective dust collection for a particle
  - Easy to treat high temperature of flue gas
  - Small quantity of waste water from less cleaning agent
  - Possible to treat toxic gas and dust simultaneously
  - Simple to maintain cost with small equipment
  - Self life is semi-permanent by using prevented corrosion material

**Classification:** Packed Tower, 2body Type Wet Scrubber, Ventri Scrubber, Wet Cyclone & Absorber

**Application:** Metal plating, Semi-conductor, Surfacing treatment, Incinerator, Chemical & Pharm, and dyeing company

## Electro Precipitation equipment

- Feature:**
- Proper to flue gas treatment for effectiveness is above 99% of effectiveness and including strongly stickiness material
  - Can be removed dust mist and gas
  - Minimized area for installation and minimized operating cost
  - Excellent durability by selection of material

**Application:** Boiler with coal, heavy oil, and lignite  
Iron & steel equipment, Glass melting furnace, Incinerator with industrial waste, Non metal, Pulp, Paper, Chemical system, Cement, Coal drying and pulverizing equipment

## Filer Dust Collector

- Feature:**
- Can select diverse and proper method for production process
  - Excellent dust collection
  - Maintain differential pressure
  - Simple structure and easy maintenance
  - Select diverse filter with considering gas composition, temperature, self life

**Application**  
All kind of grinding system, Particle transfer system, Wood process system, Cement relating system, Mixing and pulverizing system

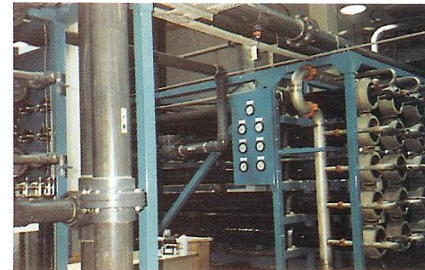
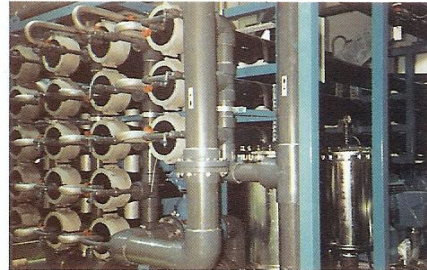
## Others

Adsorption tower, Multi Cyclone, Recovery system, etc

# Pure water treatment– Reverse Osmosis

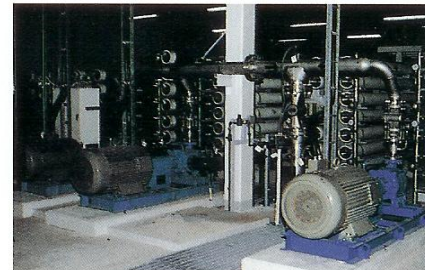
## Pure water treatment equipment (Demineralized water treatment)

- Ca<sup>++</sup>, Mg<sup>++</sup>, Na<sup>+</sup>, HCO<sub>3</sub><sup>-</sup>, SO<sub>4</sub><sup>--</sup>, Cl<sup>-</sup>, SiO<sub>2</sub> which are typically containing in raw water are removing by cationic and anionic exchange resins
- 2 beds and 2 towers(2B 2T) or 2 bed and 3 towers(2B 3T)
  - Mixed bed demineralizer
  - 2B 3T + MBP (Mixed Bed Polisher)
  - 4B 5T



## RECLAMATION SYSTEM

We are providing each industrial companies with special equipment which is recycle of ultra pure water to reduce production cost and to utilize effectively ultra pure water where desired in semiconductor and electronic industry



## Reverse Osmosis equipment

RO can filter only water, can and remove ionic material or molecular from sea water, fresh water of salt by pressing the liquid with process of separation, refining and concentration without any changing phase, can apply widely to potable water treatment, fresh water system of sea water, electronic and semiconductor industry, waste water treatment and so on.

## Application

- Fresh water system of sea water
- High purity for demineralized water treatment
- Separation equipment for energy saving
- Optimum equipment for concentration/ recycling
- Simplification equipment
- Simply operating management

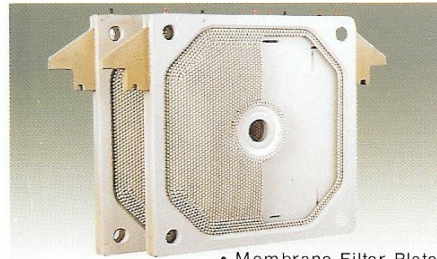
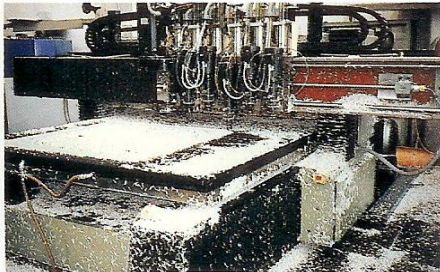
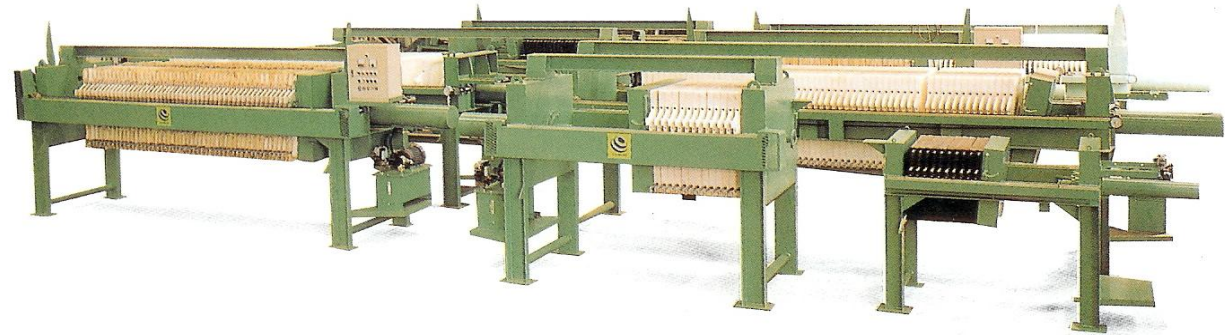




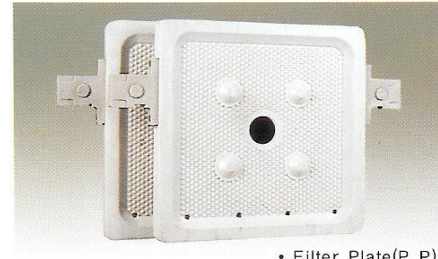
# Auto Membrane Filter Press

## FILTER PRESS

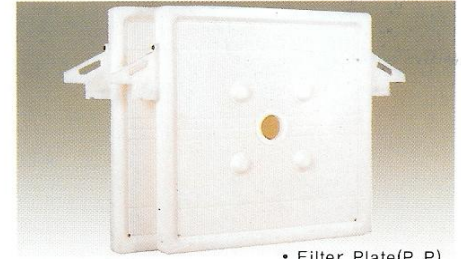
No need to use dewatering polymer, water content is lower than other dewatering equipment, less contamination of treated water, minimized rinse water so that treatment cost is highly saving that other conventional dewatering equipment. Specially this membrane dewatering equipment which is based on German high technology has very excellent pressure of effectiveness and reduce dewatering time as well as expect excellent cost saving.



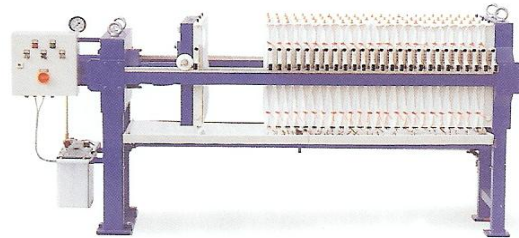
• Membrane Filter Plate



• Filter Plate(P. P)



• Filter Plate(P. P)



## FILTER PLATE

- With co-polymer of propylene, it increases regularity of cubic solid and it is excellent product to increase crystallization, anti-heat, anti-wearing, intension strength and mechanic property.
- Self life is semi-permanent, and easy to take off the cake
- Simple to maintain, no corrosive, and save dewatering time.