



Advanced
Membrane Solutions
for Clean Water & Air

WATER AND AIR SOLUTION

“ KORED Co., Ltd, is a company specializing
in the **water** and **air**, which leads the technology for **better**
and **cleaner environment** around the world. ”



GREEN
CLEAN
WATER
A I R

CEO Message

As a company specialized in water and air we have been preparing world-class technology for a long time. We are proud that we are now standing shoulder to shoulder with a world-class company in the field of water and air.

KOReD's technology, which is more and more recognized overseas, is well received for its quality and price. Compare innovative technologies.

We take the technology to the next level and value our customers' trust in us the most.

KOReD Co., Ltd. CEO **Kim Nam-Doo**

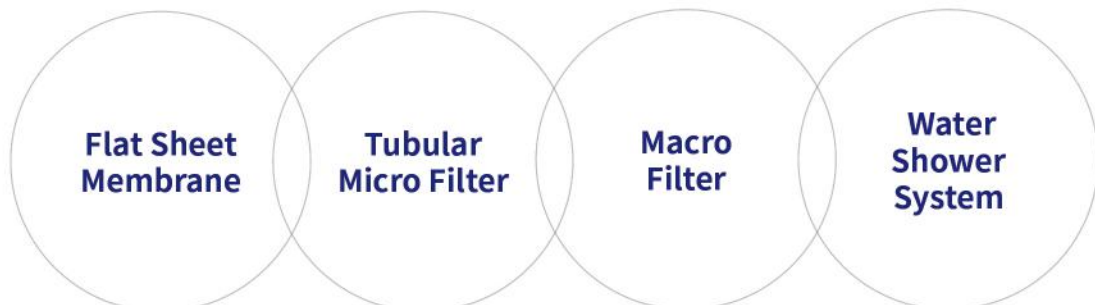
MAJOR Business

■ Engineering Part

- Sewage and waste water treatment by using MBR
- Advanced treatment of sewage and waste water
- Greywater treatment facility
- Waste water treatment facility for bio pharmaceutical organization
- Food Waste Water treatment facility
- Toxic waste water having a lot of scale (from paper manufacturing, pharmaceuticals, livestock industry and leachate)
- Collection and treatment of green algae
- Reuse of effluent and backwashing water
- Treatment of water from fish farm and river
- Pretreatment of R/O
- Equipment for manufacturing pure and ultrapure water
- Indoor air quality purification equipment
- Equipment for removal of bad odor

■ Membrane Manufacturing Part

Production headquarters · R&D center



COMPANY History

2021 -

2021. • Starts to produce the tubular air purification filter
2019. 12. • Gets selected as a company specializing in the manufacture of materials and parts
2019. 10. • Gets selected as an innovative SME (Main-Biz)
2015. 07. • Makes a cooperative agreement on water treatment system of fuel cell MBOP
2012. 04. • Certified the G-MBR new technology verification at the site

2000 -

2009. 05. • Makes the business agreement with LG Electronics on membrane
2006. 06. • Acquires certificates of ISO quality management and environmental management systems (ISO9001/ISO 14001)
2005. 08. • Gets designated as a promising export-oriented SME
2005. 06. • Gets selected as 15 core environmental technologies for next generation by Korea Environmental Industry & Technology Institute
2002. 07. • Gets selected as an INNO-BIZ company
2001. 08. • Manufactures the submerged flat sheet membrane and develops the technology of MBR system
2001. 06. • Acquires the certificate of research center
2000. 12. • Acquires the certificate of venture company

1990 -

1999. 04. • KOREd is established.



주식회사코레드
KOReD CO., LTD.



Company specializing
in **WATER** and **AIR**

Submerged flat sheet, tubular membrane,
air purification filter

FILTRATION MEMBRANE

- **Strong air backwashing**
- **Macro filtration High flow**
 - Reuse of effluent, reuse of backwashing water from sand filtration, reuse of river water, treatment of waste water from fish farm, treatment of cinder
- **Decomposition/Coating Cleaning**
 - Eco-friendly Cleaning having no hazardous chemical substance
 - Waste water having a lot of scales (paper, pharmaceuticals, leachate and food waste water, livestock liquid fertilizer) Concentration/separation of green algae
 - Service life extension of membrane

Meofil

TURBO FLO

MacFilter

WSS



Submerged
flat sheet



Tubular
membrane



MacroFilter



Air
purification
filter

KOReD applies the **innovative original technology** products.

Customer's Needs

1. Clean effluent ● ①. - MBR SYSTEM
(Hollow Fiber, Plat Type, Tubular)
2. Stable operation is critical.
(The path for scrubbing air is consistent.) ● ②. - Flat Sheet Membrane
- Tublar Membrane
3. The pulse and strong back washing should be possible
but there shall be no breakage or tearing. ● ③. - Tubular membrane
(TMF, MacFilter)
4. Even the waste water where the activity of microbe is low,
the recovery rate from the cleaning should be good.
It can be applied to
(bad waste water having a lot of scale : from paper
manufacturing, pharmaceutical companies, leachete,
food waste water, livestock liquid fertilizer) ● ④. - Decomposition/Coating type
eco-friendly cleaning (TMF)
5. The macro filtration machine for a lot of water is required
for replacing the sand filter.
(Desalination pretreatment, treatment of river water, and
fish farm, treatment of swimming pool, effluent water) ● ⑤. - MacFilter

INNOVATION Filtration Membrane!!

- Treatment of highly concentrated nitrogen
- Treatment of food waste water
- Reuse of sewage and waste water
- Pure and ultrapure water
- Treatment of effluent, backwashing water,
and river water
- Indoor air purification equipment
(removal of bad odor)

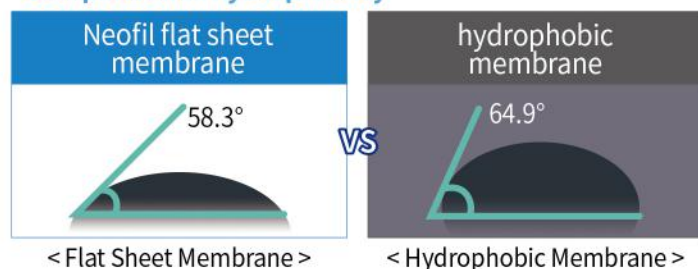


■ Flat sheet Membrane Material

Highly Permeable Membrane with Hydrophilic Material

As Neofil flat sheet membranes are made of PES (polyethersulfone), a hydrophilic polymer material, it provides better fouling resistance and water permeability in environments treated with highly concentrated activated sludge such as sewage and wastewater treatment processes unlike hydrophobic polymer materials (PTFE, PP, etc.).

*Comparison in hydrophilicity



- Highly hydrophilic, showing selective permeation under high concentration sludge condition
- Highly resistant to fouling under high concentration condition, as organic matters such as protein and microorganisms do not easily adhere
- More convenient to handle, as the pre-treatment process of increasing permeability is skipped.

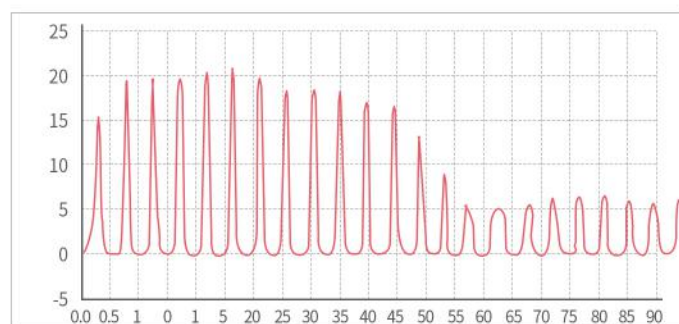
*Permeability of pure water

Classification	Contact angle	Permeability of pure water
Hydrophilic membrane (PES)	58.3°	4,375LMH
hydrophobic membrane (PP)	64.9°	3,844LMH

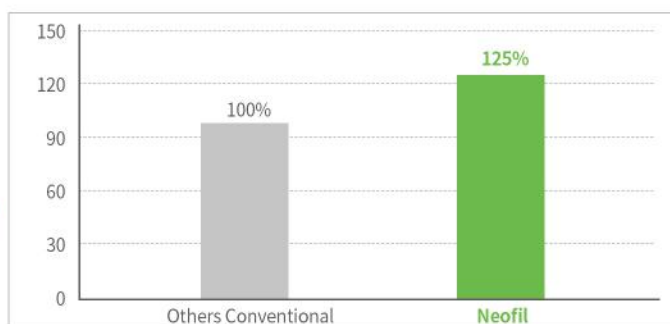
High Adhesiveness of The Flat Sheet and Panel

The flat sheet module is produced with thermal fusion facility that is specialized for membrane sheet and ABS panel, providing high durability and adhesiveness and therefore usable even in bad conditions.

- Adhesiveness stronger by 25% compared to competitor



< Adhesion Creep Test >



< Adhesion comparison Test >

■ Submerged Flat sheet Membrane

leofil Specification



ITEM	FN TYPE	FT TYPE
Effective Area	1m ² /module	0.8m ² /module
Dimension (W×H×T mm)	490 × 1,200 × 13.5	490 × 1,000 × 6
Membrane Material	PES	PES
Membrane Supporter Material	ABS	ABS
pH	2 ~ 11	2 ~ 11
Operation Pressure	< -0.6kgf/cm ²	< -0.6kgf/cm ²
Weight	1.7kg	2.8kg
Chemical	-5,000mg/l (as NaOCl)	-5,000mg/l (as NaOCl)

MBR Unit Specification



SPECIFICATION			
Model	Size W × L × H(FT/FN) (mm)	Flow Rate Min ~ Normal ~ Max (m ³ /day)	Remark
leofil®-100S	584W × 1,512L × 1,590/1,730H	33.0 ~ 40.0 ~ 50	
leofil®-150S	584W × 2,224L × 1,590/1,730H	50.0 ~ 60.0 ~ 75	
leofil®-200S	584W × 2,912L × 1,590H	66.0 ~ 80.0 ~ 100	
leofil®-150D	584W × 2,224L × 2,906/3,308H	100.0 ~ 120.0 ~ 150	
leofil®-200D	584W × 2,912L × 2,906H	133.0 ~ 160.0 ~ 200	

■ Tubular Membrane

Strong Tubular Micro Filtration Membrane

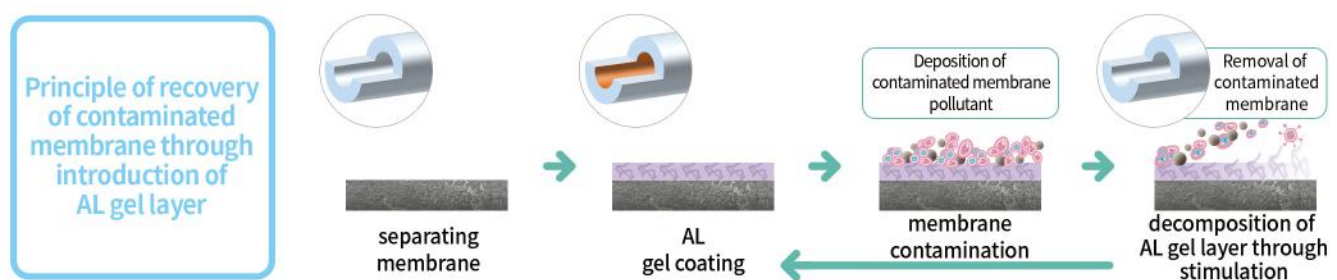
As it has a strong supporting body in a tubular shape, it does not crack or burst so that it is possible with strong backwashing. Because the scrubbing air flow path is constant, and the air scrubbing effect is good, membrane gets less clogging.

Less Site Required, Less Scrubbing Air

- By Layer-Built, it has less projected area and the volume of scrubbing air.
- As it adopts the pulse type air diffuser, the fouling is minimized with less scrubbing air.

AL Hydrogel Coated Regenerative Functional Separator

As it does not use the harmful chemicals but decomposes and coats the natural photosensitive materials during cleaning to replace the cleaning, it does not only realize the eco-friendly cleaning but also has the complete washing effect over the bad waste water having a lot of scale (coming from paper manufacturing, pharmaceutical companies, leachete, food waste water) Eco-friendly scrubbing with the decomposition/coating method dramatically extends the life of the separator.



TMF Application Field

- Applies to the MBR having less area
- bad waste water having a lot of scale : paper, pharmaceutical, food waste water, livestock liquid fertilizer)
- Collection and treatment of adhesive green algae : treatment of lake, pond cleaner
- Small size treatment: treatment of condensate water from food, simple outdoor toilet

TMF Module Specification



Module

Type	Submerged
Membrane Material	PES
Pore Size	0.15μm
Operation Pressure	<0.6kgf / cm ²
Dimension	Ø250 × 530H
Operation Flux	15 ~ 30LMH

TMF Module Specification



Type	Pressurized
Membrane Material	PES
Pore Size	0.15μm
Operation Pressure	1.0 ~ 1.5kgf / cm ²
Dimension	Ø75 × 1,140L (Ø60 ~ 2,000L)*1
Cleaning	40 ~ 100LMH

*1 Special custom products

■ BackWashable Macro Filter

MacFilter Feature

The technology for separating micro-particles in the current market includes a method using a filter material (sand or multi-layered filter material), an auto strainer method using a micro screen, and a method of forming pores by pressing with fiber yarn in addition to the cartridge filter method.

The common problem with this method is that the fouling can be solved by releasing pores during backwashing. However, it has the fatal weakness in that, though the instantaneous throughput is good due to excessive backwashing depending on the raw water, the total throughput is much less than expected, and in that the energy cost is high due to the excessive backwashing process. MacFilter is a stable and powerful product that remarkably reduce the loss caused in the backwash process by introducing an instant air backwash process in order to overcome the shortcomings of the existing products.

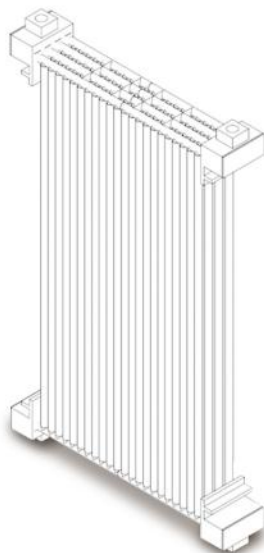
MacFilter System is a filtration treatment technology that applies Macro Filter. Compared to existing filtration devices, it has a large treatment capacity and is a highly integrated filtration system that is easy to clean.



MacFilter Application Field

- Filtration facility for effluent (replacing sand filter)
- Reuse of backwashed waste water from sand filtration
- Pretreatment of advanced filtration (UF, RO, etc.) system
- Reuse facility for rainwater and swimming pool water
- Treatment of incineration ash from pyrolysis incinerator
- Treatment of tunnel wastewater and contaminated wastewater
- Total phosphate treatment
- Waste water from fish farm
- Treatment of water from lake or river
- Removal and separation of other particles

MacFilter Module Specification



Module

This is a product image and is different from the actual product.

Type	Submersible Macro Filter
Module Frame Material	ABS
Pore Size	2 ~ 10 μ m
Element Material	PVDF
Maximum Temperature	50 °C
pH range	3 ~ 13
Operation pressure	-6 ~ 0 kgf / cm ²
Operation Flux	80 ~ 500LMH

MacFilter Unit Specification



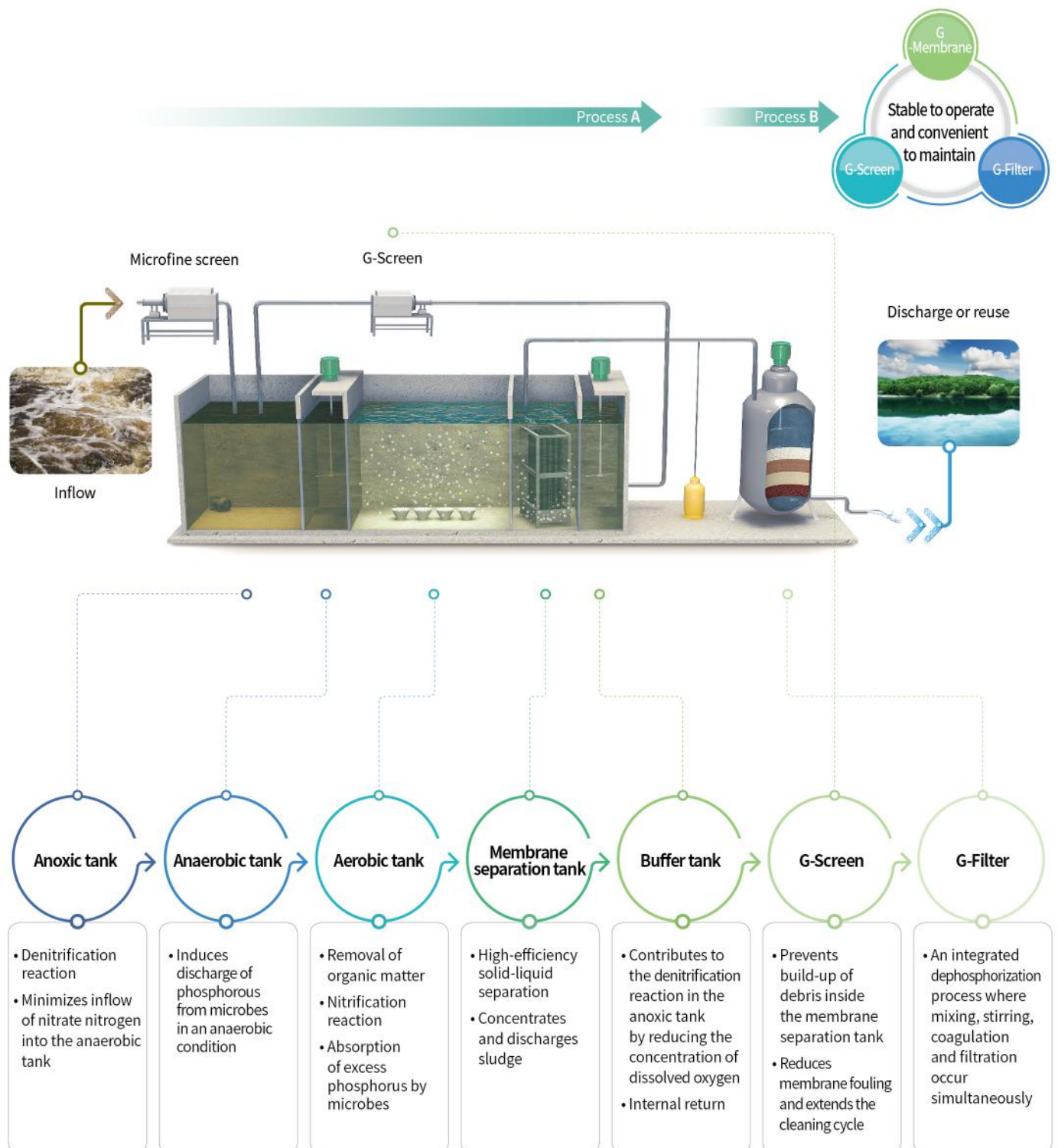
SPECIFICATION		
Model	Size W × L × H (mm)	Flow Rate Min ~ Normal ~ Max (m ³ /day)
MAF 24D	650 × 1,000 × 1,800	72~ 86 ~ 230
MAF 36D	650 × 1,050 × 1,800	108 ~ 125 ~ 345
MAF 44D	650 × 1,700 × 1,800	132~ 153 ~ 422

- The application model may vary depending on the quality of inflow

■ Sewage and Wastewater Treatment System

G-MBR (Green-Membrane Bio-Reactor Process)

G-MBR provides you with installation of high flux hydrophilic Membranes manufactured eco friendly process, the stability of MBR process by the internal returned water, easy maintenance and Economic operation.



Reclamation System for Sewage & Wastewater Treatment



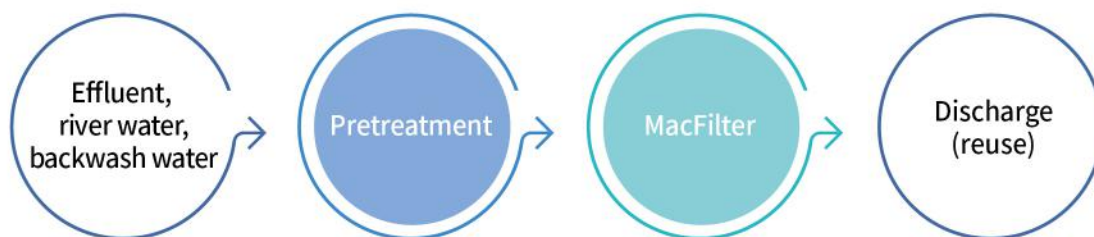
KORed performs advanced treatment with membrane and wastewater re-use process as well as standard physical, chemical, and biological treatment of waste water.

*PCB Wastewater

Item	Inlet	Outlet
pH	1-3	6-7
Cu	80	0.01 or below
BOD	50	0.5
Conductivity	3,500	70
Turbidity	30	0



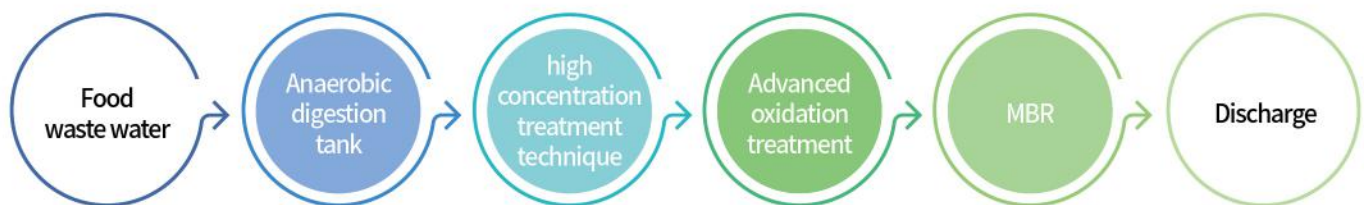
Reuse System



ITEM	Inflow (mg/l)	Treated water (mg/l)	Remarks
Turbidity (NTU)	100	1.0	Reuse
SS (mg/l)	30	3.0	Treated water

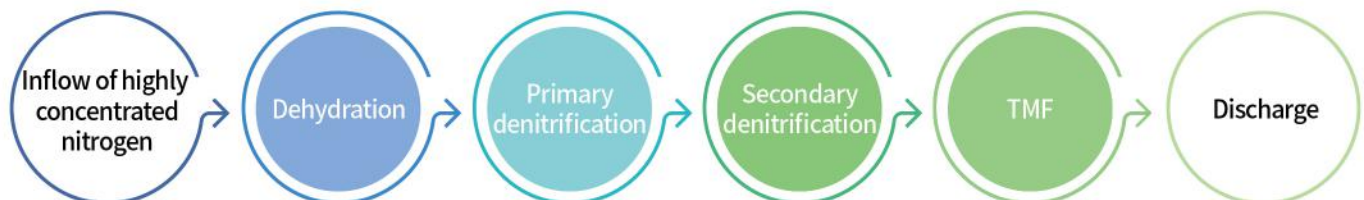
● The quality of the treated water may vary depending on the characteristics of the influent.

Food Wastewater Treatment

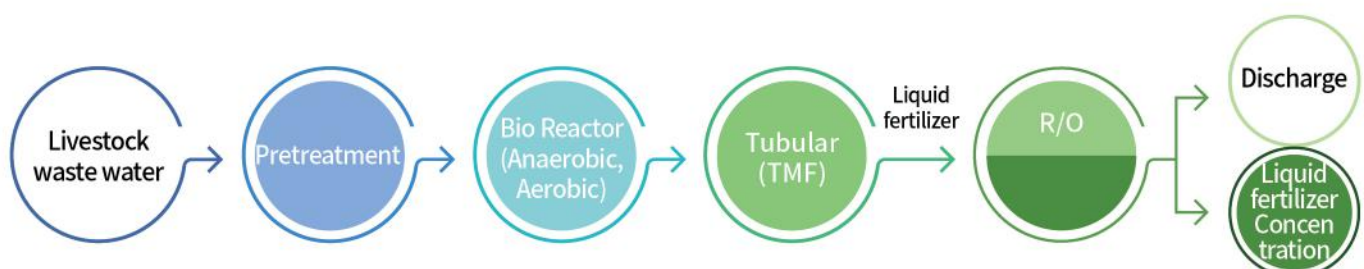


ITEM	Inflow(mg/l)	Effluent (mg/l)
BOD	18,000	30
TOC	20,000	30
T-N	4,000	27
T-P	700	3

High Concentration Nitrogen Treatment



Livestock Liquid fertilizer Treatment and Concentration



■ Ultrapure Water System

Ultra Pure Water System

■ Table of Ultra Pure Water Quality

ITEMS		Grade1	Grade2	Grade3
Resistivity (MΩ · cm at 25°C)		17.5	18	18.2
TOC(ppb)		20	5	1
Particles	≥0.1μm	20	5	0.1
(pcs/ml)	≥0.05μm			1.0
Bacteria (cfu/100ml)		50	1.0	0.1
Dissolved Oxygen (ppb)			1.0	1



For Fuel Cell Pure Water System

KORed is simplifying water treatment process with high technology, engineering, and applying the Package System to fuel cell power plant which is for maximum performance and minimum maintenance.



R/O SYSTEM

Pure Water, Ultra Pure Water, Reuse, Livestock Liquid fertilizer application



■ Water Shower System

WSS (Water Shower System)

The general air purification filter produces the clean air by filtering out the contaminant from the air. But, it is hard to continue to control the contamination of filter. Water is just the best filter! If the water is continually discharged, the humidified comfortable air can be kept. In addition, it makes the air have the proper humidity with the natural humidifying effect along with the removal of fine dust, bacteria, fungi, virus, NH_4 , SO_x , and NO_x .

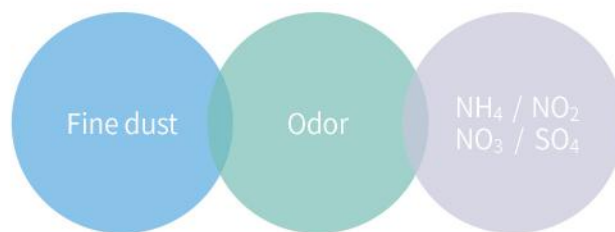


AWS (Air Washer System)

The washing type scrubber (absorption method) is the gas-liquid contact method which decomposes the soluble ingredient in the gas (bad odor) in the liquid. It has weak points such as the high installation cost, and input of acid and alkali chemicals due to the washing of chemicals. But, as this system enhances the gas-liquid contract by using the gas-liquid contact chemical which is characterized by the absorption of water, it does not need the chemical, but needs the small size and low cost.



Actual product is Duct connection type



■ Gas-liquid contact filter

It is the non-woven fabric in the form of corrugate having high absorption rate and is strong so that it can make the wide contact area between gas and liquid by passing the air between gas-liquid contact filter containing the liquid.

■ Features

- Low price
- Easy to maintain
- No use of chemicals
- Less required area

Company specializing
in materials and parts

MAINBiz

INNOBIZ
Innovation Business Company



WATER & AIR SOLUTION

- Sewage & Waste Water
- Food Wastewater
- Reuse System
- DI & U.P.W System
- Water Shower System

PRODUCTS

- Flat Sheet Membrane
- Tubular Mambrane
- MacFilter
- WSS Eliminator

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