



Containerized Water Treatment System



Building disaster-resilient communities.

Emergency rapid-response mobile water treatment system.

Earthquakes, typhoons, and heavy rains can disrupt water supplies for days, leaving communities without drinking, cooking, or sanitation water.

Tohkemy's Containerized Water Treatment System is emergency-ready, reliable, and easy to deploy, ensuring clean water, protecting lives, and strengthening community resilience.



Excellent mobility

Fully integrated into a container, the system can be quickly transported and installed, minimizing the time to deliver water in emergencies. Modular internal units can be moved using standard crane trucks (e.g., 10-ton crane truck).

Outstanding durability & long-term storage

Using globally used shipping containers, the system provides excellent weather resistance and allows for safe long-term storage.

Capable of high-volume water supply

The pretreatment stage employs Actifiber with superior turbidity removal performance, ensuring stable water supply even when river water sources experience high turbidity. The design requires minimal backwash water for regenerating the main filtration unit, reducing wastewater discharge.

Suitable for everyday use

The system can be used alongside municipal water supplies as a supplementary source during normal conditions. In emergencies, it is recommended for full-scale operation in affected areas.

Compatible with various water sources

The system can treat a wide range of water sources, including river and well water. With a super microfiltration membrane (SMF), it removes Cryptosporidium, and optional features can further enable PFAS removal.



Core Technology of Containeized Water Treatment System

Fiber Filtration: Features of Actifiber®

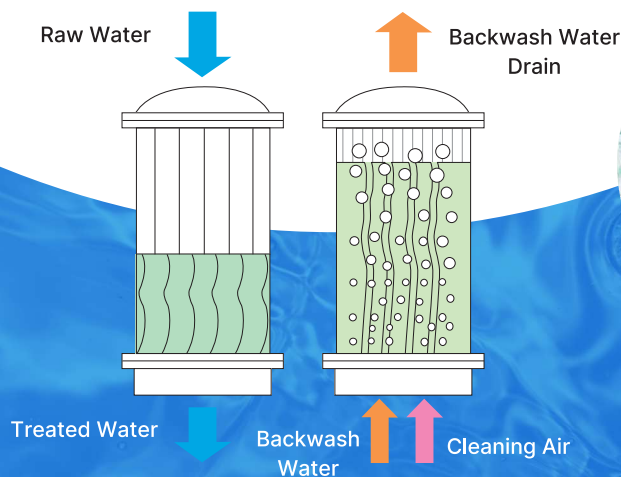
To ensure stable water treatment, proper pretreatment before the main filtration unit is essential.

River water, often used as a source, can become highly turbid during rainy seasons or disasters, which can compromise the performance of sand or membrane filtration.

Actifiber® is a fiber-based filter media with excellent turbidity removal capability.

It effectively pre-treats highly turbid raw water, producing low-turbidity feed water and supporting reliable clean water supply.

Filtration and Cleaning Process



Feature

1

High Turbidity Removal Capacity

With a void ratio of over 90% (compared to around 50% for sand or anthracite), and the use of numerous fibers measuring several tens of micrometers, this media captures significantly more turbidity than granular filters. Raw water with turbidity up to 100 NTU can be reduced to below 5 NTU (with coagulant).

Feature

2

Reduced Backwash Water Consumption

The cleaning process employs powerful simultaneous air and water cleaning, achieving exceptional cleaning results with minimal water amount.

Feature

3

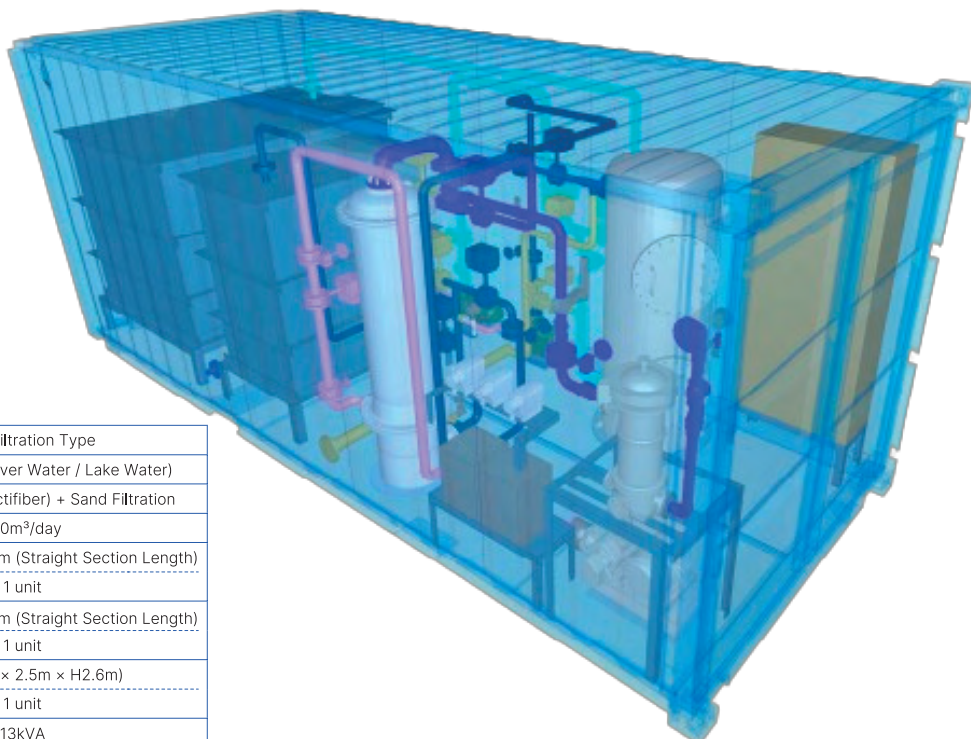
Stable Filter Layer

The fiber filter media is secured at the top with suspension cords, maintaining a consistent filter layer, minimizing compaction, and enabling long-duration filtration.

Sand Filtration Type

This is the most fundamental granular media filtration process, in which water passes through a layer of media such as sand, removing turbidity and impurities. Single-layer filtration uses one type of media, while multi-layer filtration combines media of different densities, such as anthracite, for enhanced performance.

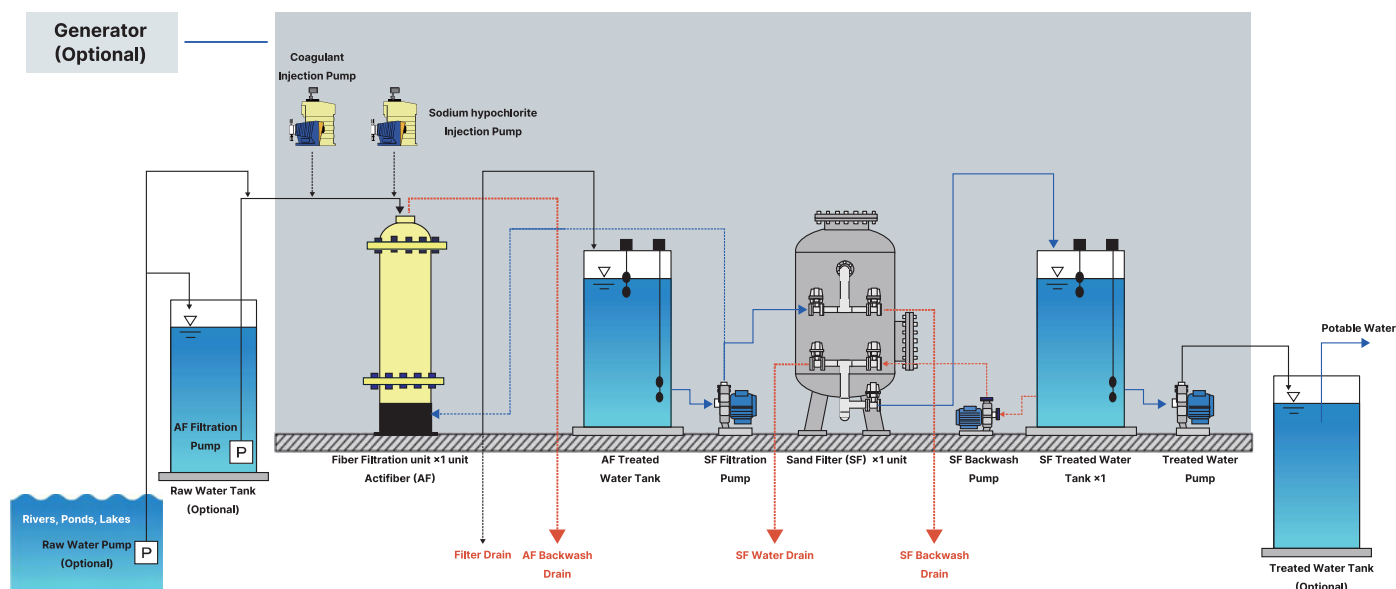
By using Actifiber® for pretreatment (primary filtration) before the main sand filtration, the system efficiently produces potable-quality water.



Main Specifications

Model		Sand Filtration Type
Raw Water		Surface Water (River Water / Lake Water)
Flow		Fiber Filtration (Actifiber) + Sand Filtration
Treatment Capacity		100m ³ /day
Actifiber	Shape	Φ 500mm × H1300mm (Straight Section Length)
	Quantity	1 unit
Sand Filter	Shape	Φ 800mm × H1800mm (Straight Section Length)
	Quantity	1 unit
Container	Type / Dimensions	20ft (6.1m × 2.5m × H2.6m)
	Quantity	1 unit
Maximum Power Consumption		13kVA
Power Supply		3-phase 200V 50-60Hz

Process Flow Diagram



Super Microfiltration Membrane Type

This filtration process employs hollow-fiber membranes with micro-pores in the fiber walls, enabling physical removal of suspended solids, bacteria, and other particulates larger than the pore size. Water and dissolved solutes pass through the membrane pores, while turbidity, microorganisms, and pathogens are retained, ensuring consistent high-quality effluent.

Actifiber® is used for pretreatment (primary filtration) to reduce turbidity before the main membrane filtration, enhancing performance and protecting the membrane. This system is also capable of removing Cryptosporidium, which is typically challenging to eliminate with conventional sand filtration.

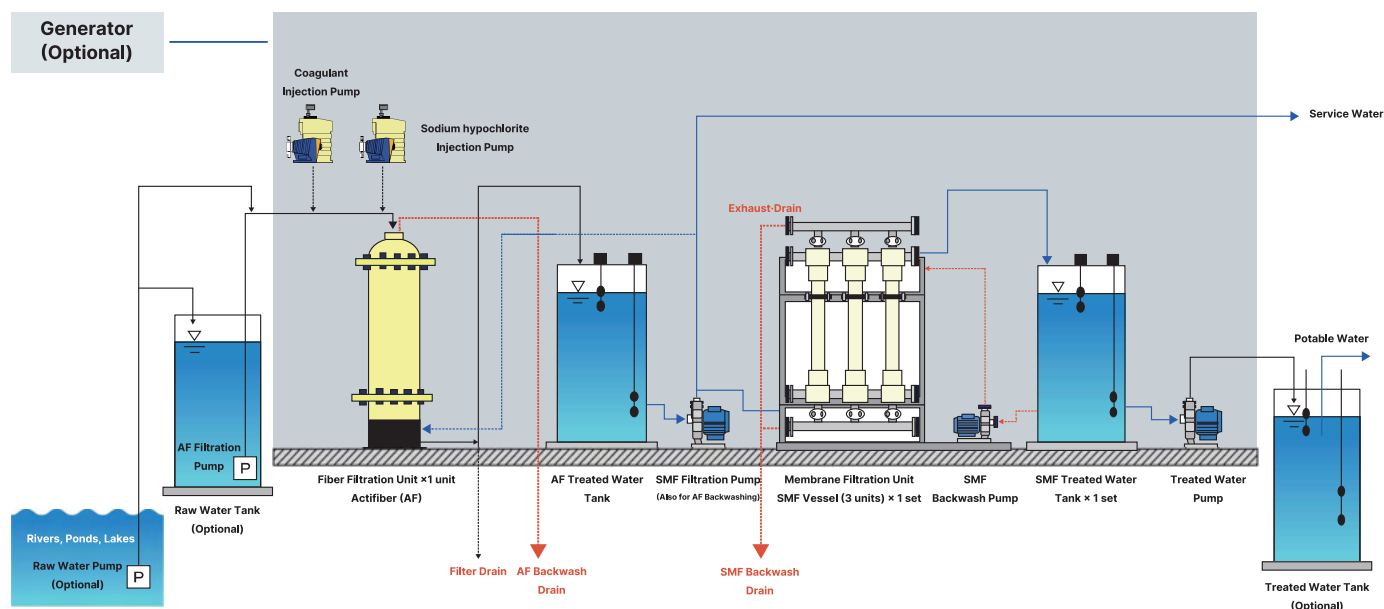
Fiber Filtration Actifiber

Main Specifications

Model		Super Microfiltration Membrane Type
Raw Water		High-turbidity surface water
Flow		Fiber filtration (Actifiber) + Membrane filtration (SMF)
Treatment Capacity		200m ³ /day
Actifiber	Shape	Φ500mm × H1300mm (Straight Section Length)
	Quantity	1 unit
SMF Membrane (Vessel Type)	Membrane Area	40m ² /unit
	Quantity	3 units
Container	Type / Dimensions	20ft (6.1m × 2.5m × H2.6m)
	Quantity	1 unit
Maximum Power Consumption		17kVA
Power Supply		3-phase 200V 50/60Hz



Process Flow Diagram



Chemical Injection Unit



**Membrane Filtration
SMF Membrane**



Options

Equipment and devices that are not stored inside the container are available as optional items. Options will be discussed during consultation.

① Generator

Required when securing commercial power supply to operate the water treatment unit is difficult at the installation site .

Specifications (Example)	200V / 20kVA or higher Diesel (Light Oil)
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② Water Intake Facility

Standard installation assumes the unit will be installed within 15m of the water source and a head of 3m. If installation adjacent to the water source is not possible, additional intake facilities will be required.

Specifications (Example)	Submersible pump: 1.5kW or larger Relay tank: 1m ³ Piping hose, power cable: 30m
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③ Water Supply Tank

Recommended when many people will be using it simultaneously.

Specifications (Example)	PE Tank: 2, 5, 10m ³ Simple Stand-Type Faucet
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④ Water Quality Measuring Instruments

Water quality measuring instruments can be provided upon request.

Specifications (Example)	Residual Chlorine Meter:0-2mg/L Turbidity Meter:0-1000NTU pH Meter:0-14
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⑤ Activated Carbon Unit

Required for removing chlorine odor, color, and PFAS.

Specifications (Example)	Design is based on water usage volume.
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⑥ RO System

Capable of removing PFAS, salts, and wide range of harmful substances.

Specifications (Example)	Design is based on water usage.
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The options cannot be stored in the containerized water treatment system and require a separate storage location. If necessary, we will provide a separate container.



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