Water Treatment
Solutions

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we make life flow

Aliaxis is a global leader in advanced fluid management solutions that enable access to water and energy.

+ 15.000 employes
+ 40 countries
+ 75 plants
3 research hubs

aliaxis

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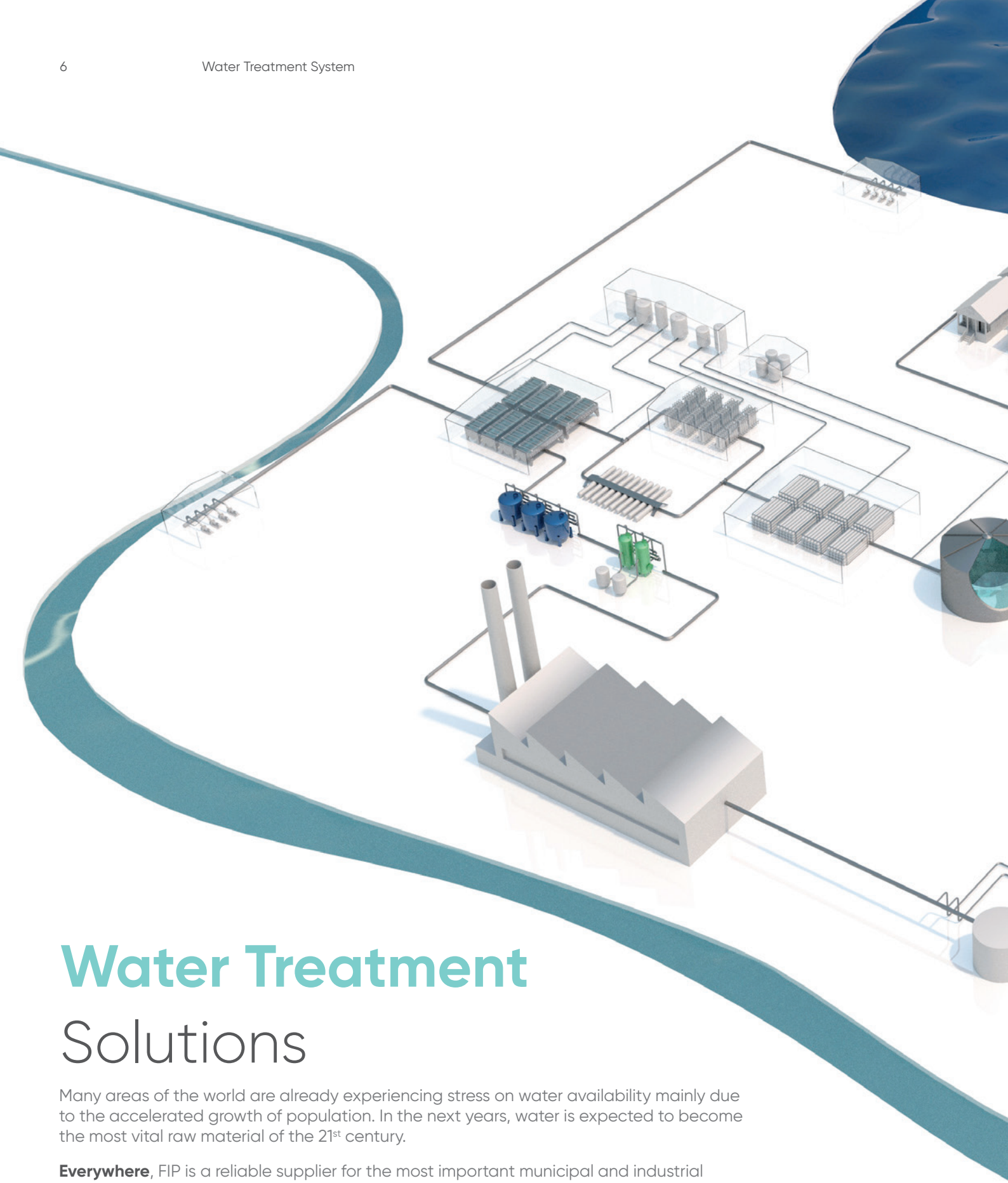


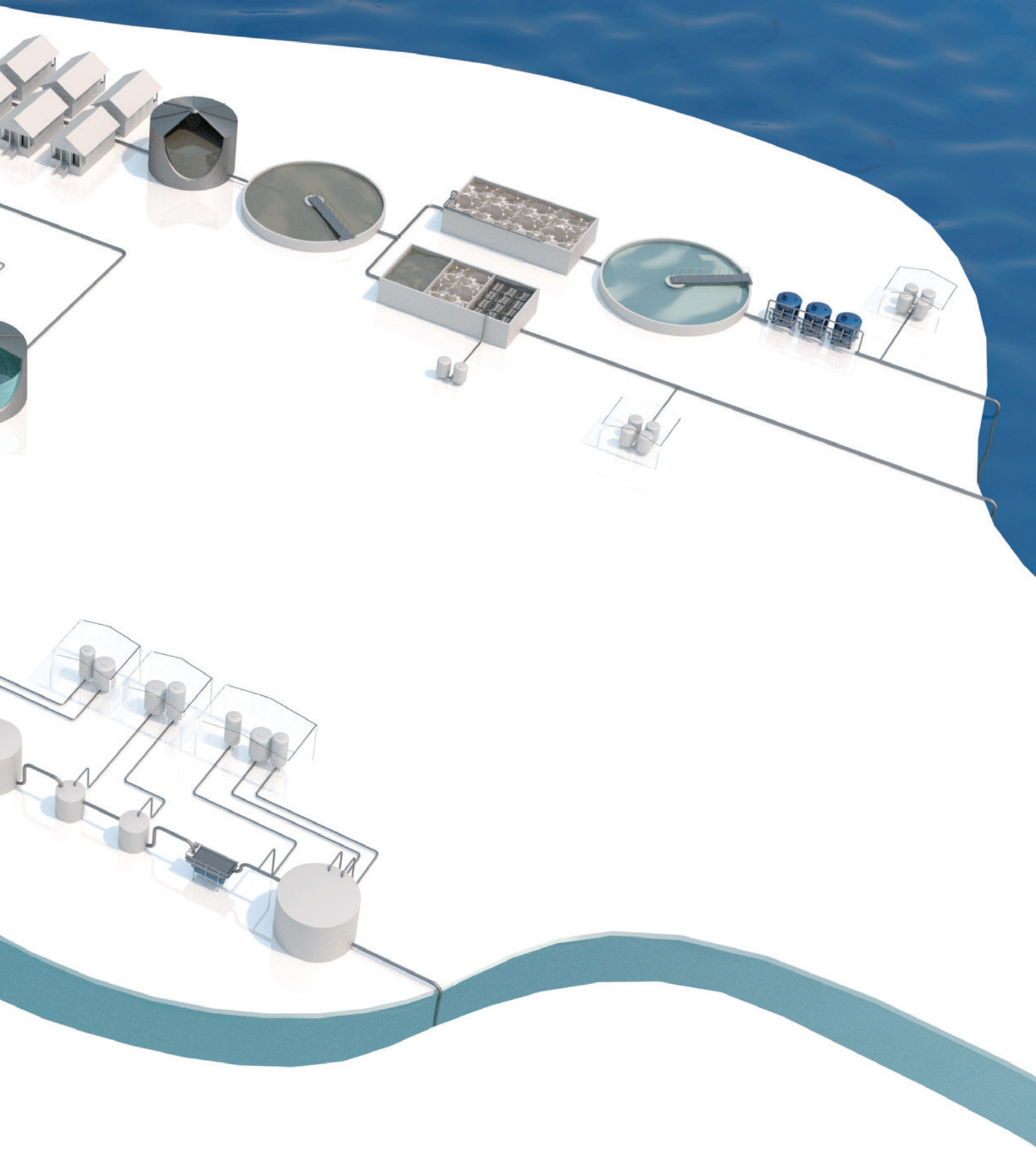
Water Treatment
Solutions

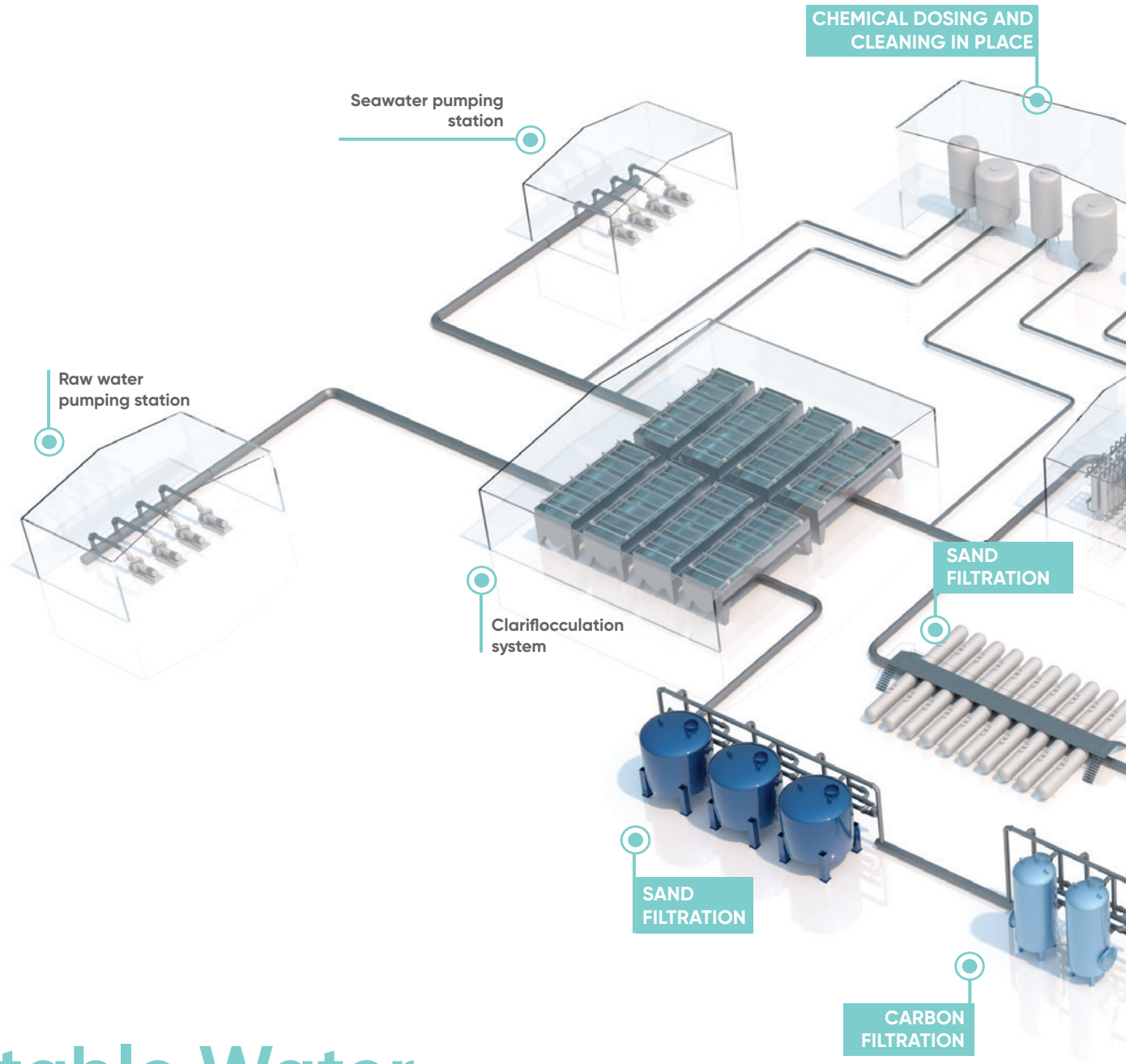
Many areas of the world are already experiencing stress on water availability mainly due to the accelerated growth of population. In the next years, water is expected to become the most vital raw material of the 21st century.

Everywhere, FIP is a reliable supplier for the most important municipal and industrial water and wastewater treatment processes where is required to remove the contaminants from the different water sources (e.g. surface water and seawater) and to convert wastewater into an effluent that can be reused or returned to the water cycle with minimal environmental impact.

Thanks to the extreme versatility of FIP valves and components, and their high costs/performance ratings, you can choose the most appropriate solution, according to your application.

The Water Cycle



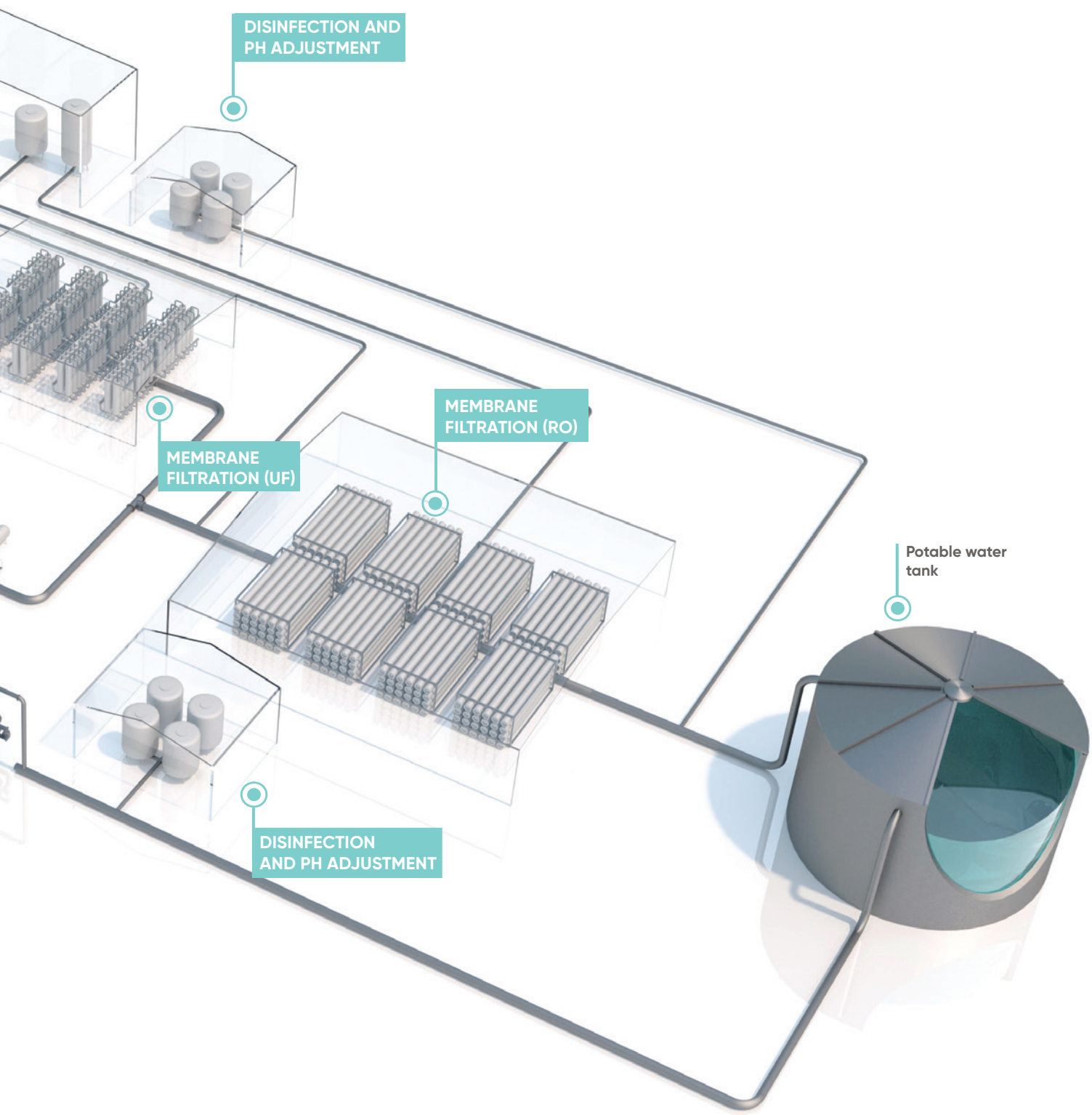


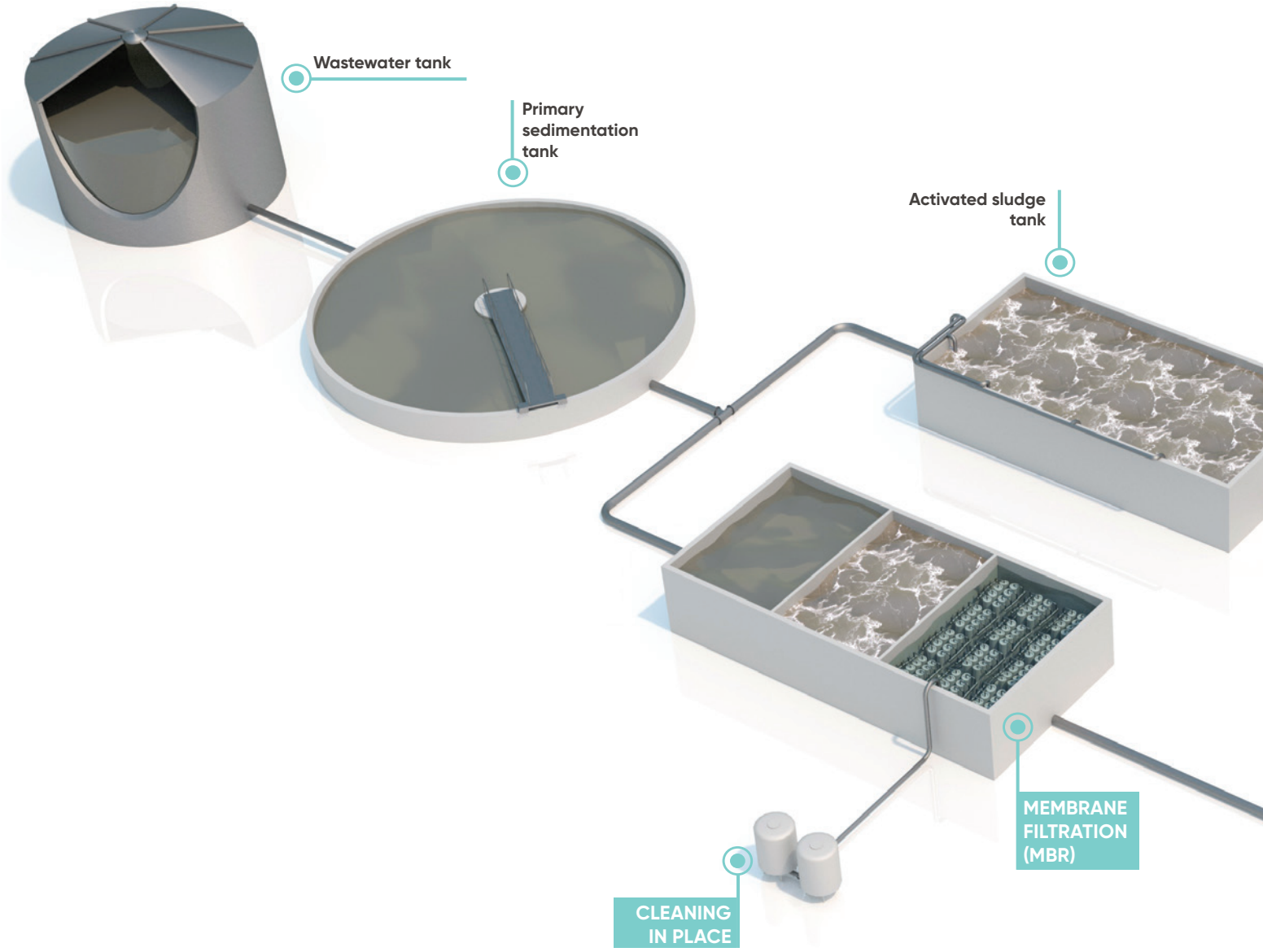
Potable Water Treatment

Good drinking water quality is something too often taken for granted, but except for a little number of fresh sources, it is the result of previous treatments.

The raw water of a potable water treatment plant can come from different sources: surface waters come from rivers, lakes and reservoirs, which may have a wide range of chemistries with high mineral and metal contents, chloride levels and particulates, while sea and brackish waters can also have different specific kinds of minerals and salts to be removed.

No matter how simple or how complex is your process, FIP provides solutions for any kind of potable water treatment applications thanks to the wide range of products supported by a huge **know-how** and experience in water treatment sector.


DISINFECTION AND PH ADJUSTMENT
MEMBRANE FILTRATION (UF)
MEMBRANE FILTRATION (RO)
Potable water tank
DISINFECTION AND PH ADJUSTMENT

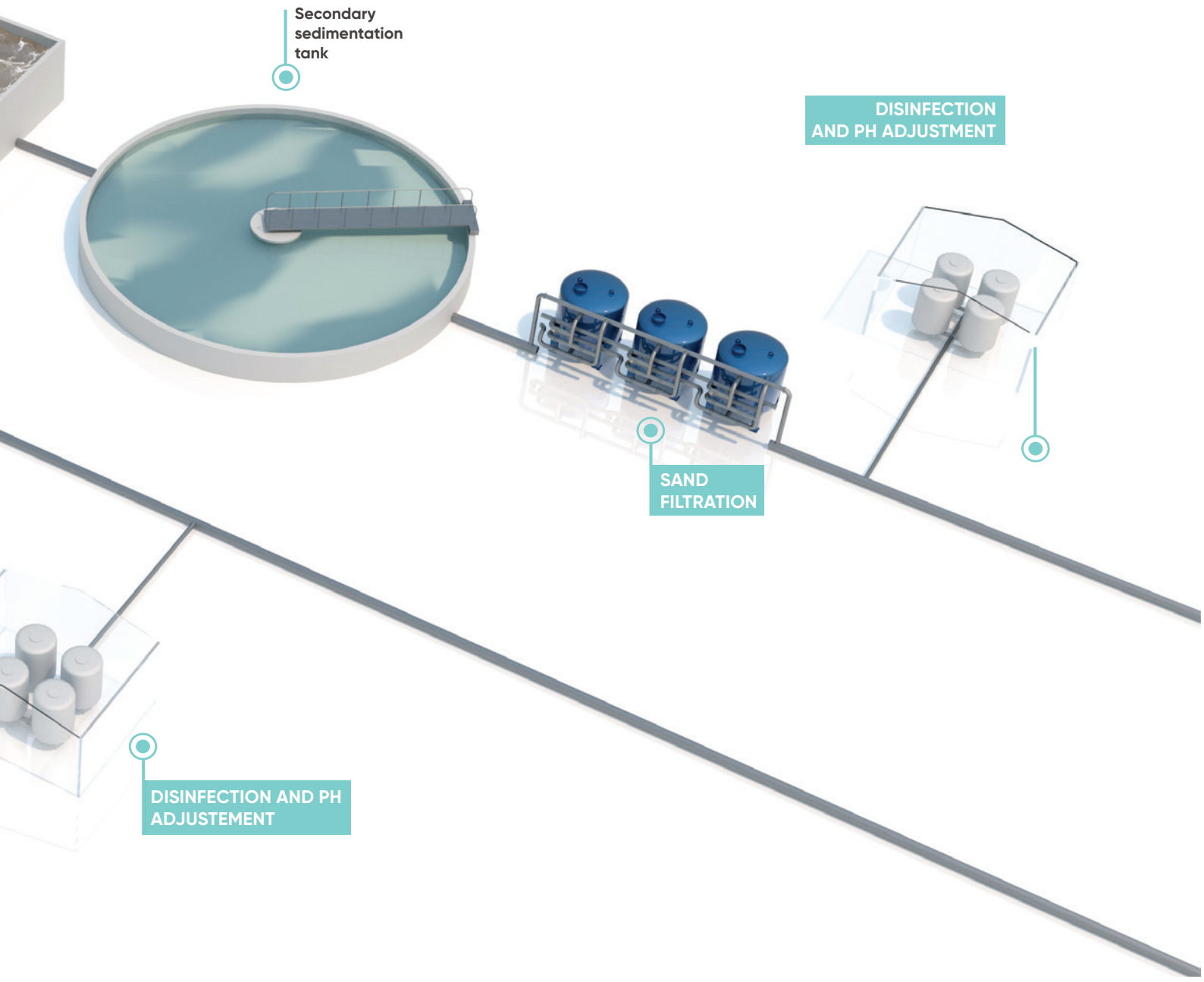


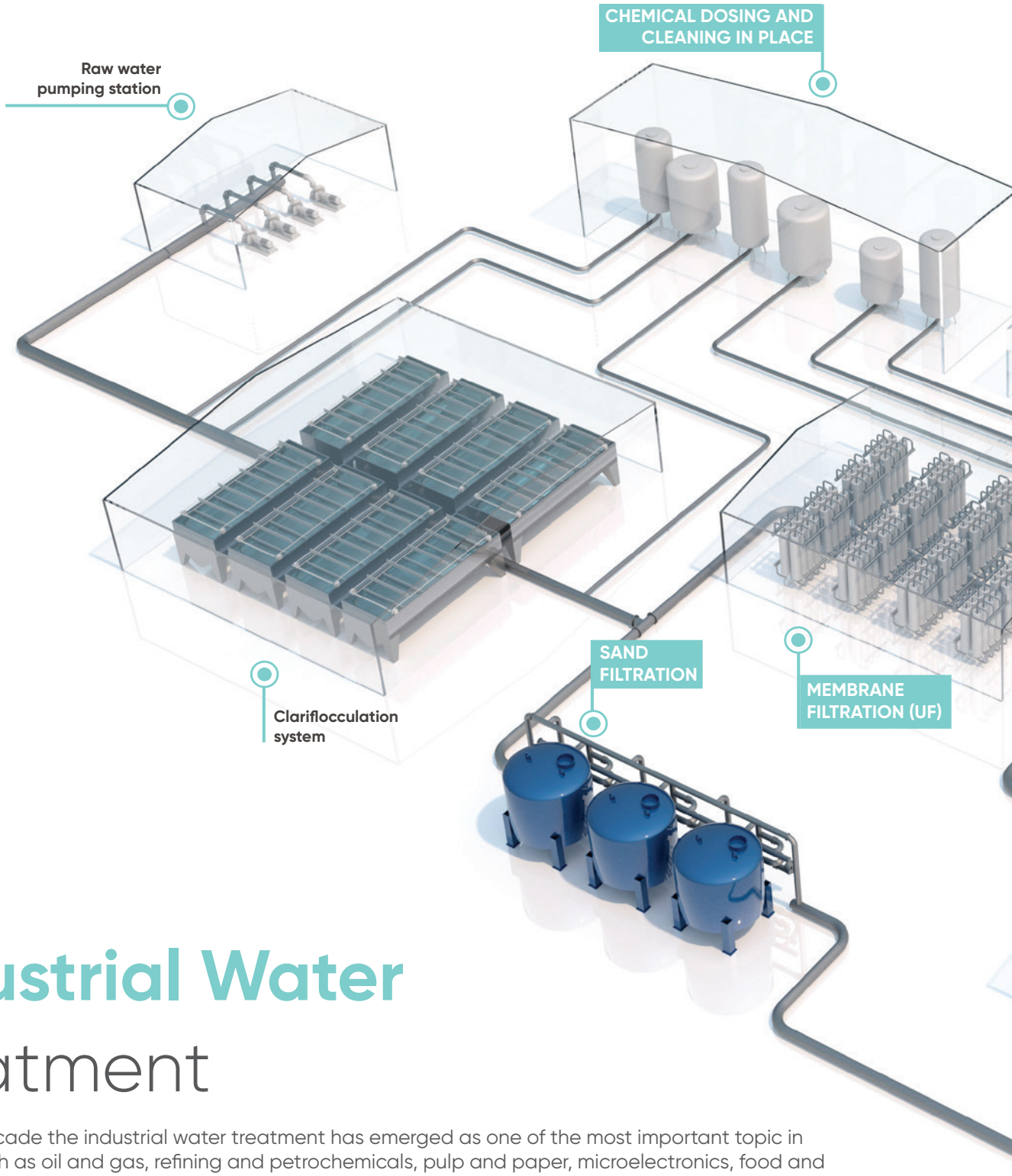
Municipal Wastewater Treatment

Municipal wastewater treatment is a key sector to keep a clean water cycle working: pollution from municipal waste is one of the main challenging issue of the future as the population growth in various geographical areas strongly require new and more efficient wastewater treatment plant.

Municipal wastewater contains biological human waste and organic garbage, detergents, oils, paper fibers as well as other highly polluting chemicals that have to be neutralized to minimize the environmental footprint.

FIP is a provider of proper **solutions** for municipal wastewater treatment plants producing highly efficient products operating in every phase of the treatment.


Secondary sedimentation tank
DISINFECTION AND PH ADJUSTMENT
SAND FILTRATION
DISINFECTION AND PH ADJUSTEMENT



Industrial Water Treatment

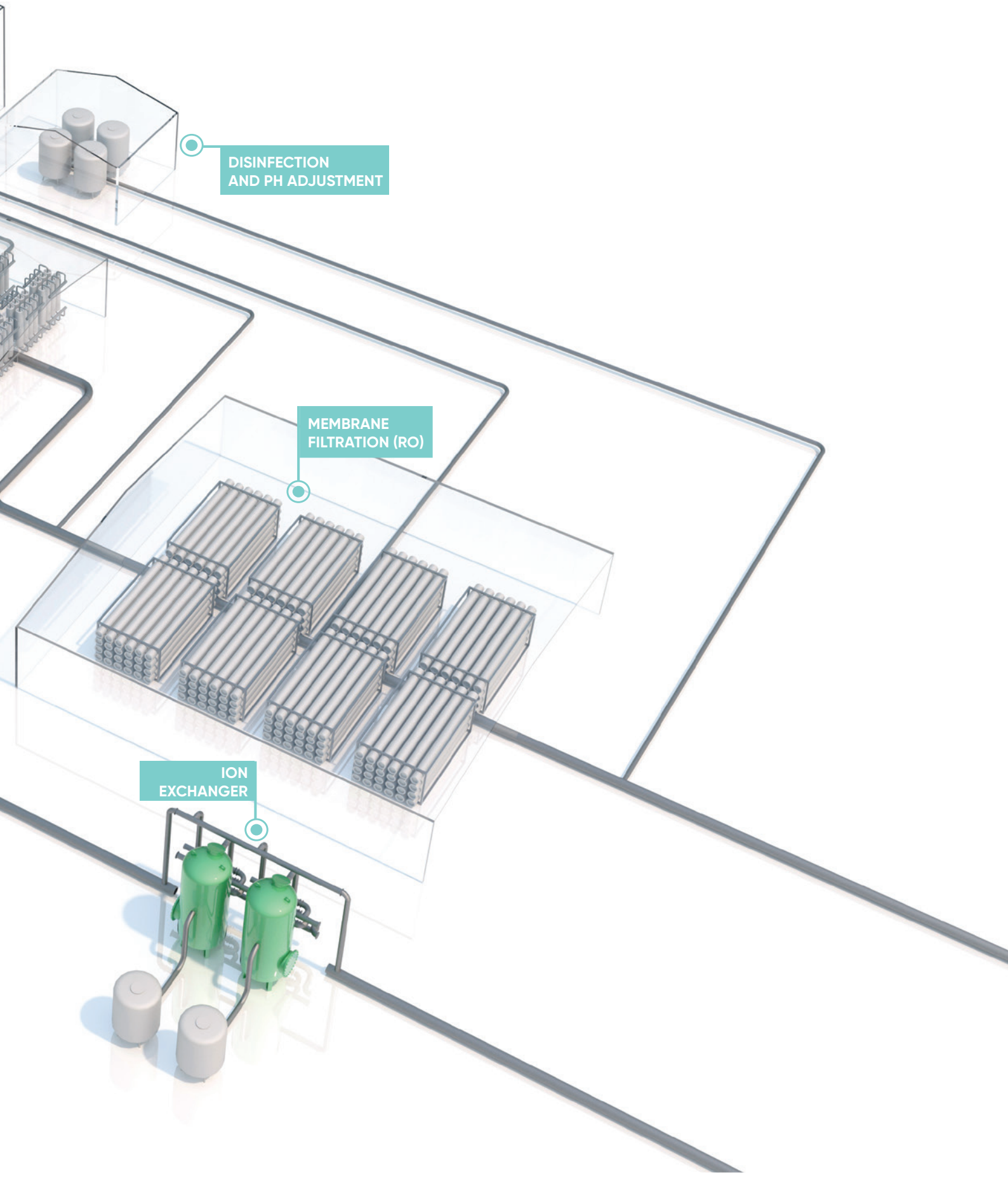
In the last decade the industrial water treatment has emerged as one of the most important topic in industries such as oil and gas, refining and petrochemicals, pulp and paper, microelectronics, food and beverage, power generation and mining.

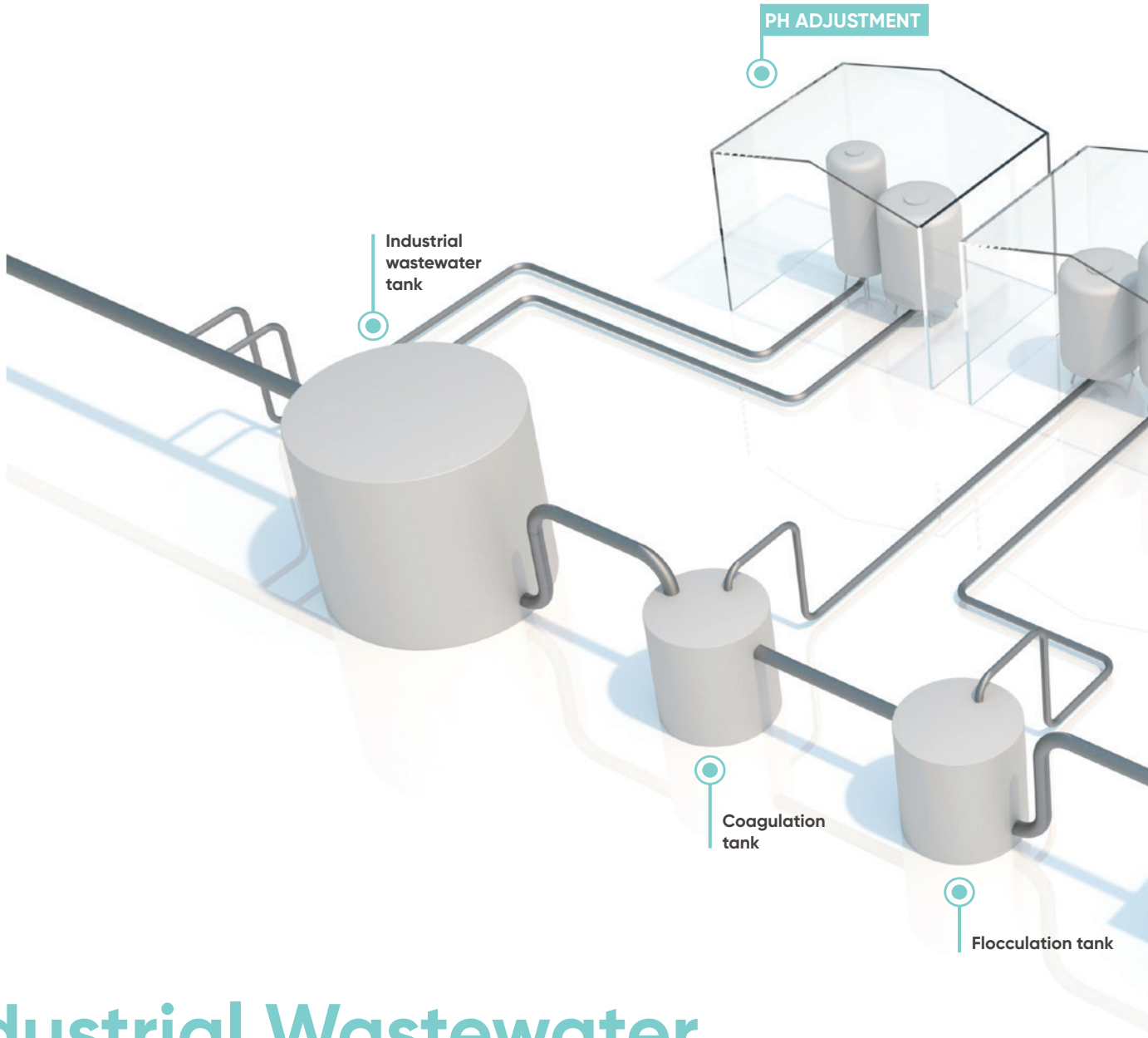
Within these industries, Reverse Osmosis (RO) and Ultrafiltration (UF) are the most important technologies associated with simple salt removal: the treatment of seawater used as feed water for industrial purposes is the most common solution when alternative water sources are not available.

Ion Exchange (IE) and Electrodeionization (EDI) are mainly utilized when higher levels of water purity (ultrapure water) are requested.

Ultrapure water is often used to prevent scale formation in boilers of power generation plants and as process water for several industries where low conductivity is necessary (e.g. microelectronic and pharmaceutical).

Taking advantage of thermoplastic resins' **versatility**, FIP has implemented valves and fittings suitable to various needs, according to the specific application requirements.


DISINFECTION
AND PH ADJUSTMENT
MEMBRANE
FILTRATION (RO)
ION
EXCHANGER



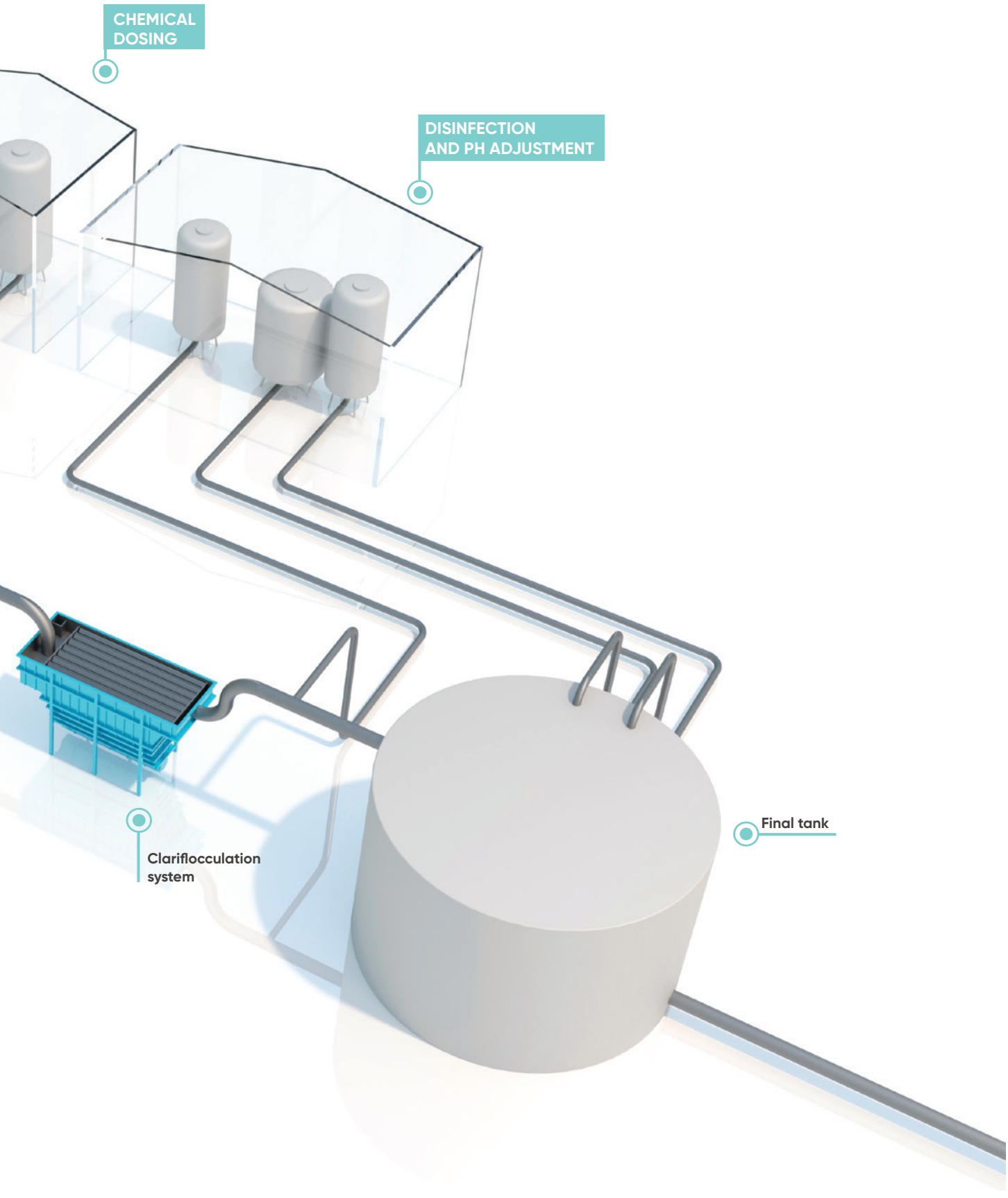
Industrial Wastewater Treatment

All industrial processes generate wastewater that have to be reconditioned before being reused or returned to the water cycle.

To take care of the environment and protect people and natural resources, environmental sustainability issues must be approached with sense of responsibility.

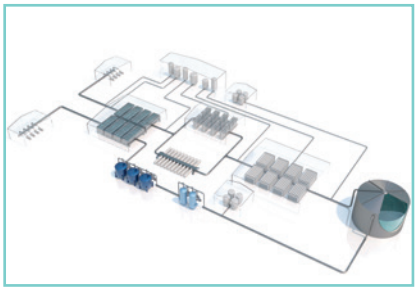
Severe regulations are necessary to set new limits on discharge of wastewater and industrial facilities have to undertake effective actions to comply with these new conditions and requirements.

To help Customers in this challenging task, FIP constantly invest to respect the most stringent quality standards in order to provide not only reliable products but all round sustainable solutions to return clean water into the water cycle.


CHEMICAL DOSING
DISINFECTION AND PH ADJUSTMENT
Clariflocculation system
Final tank

Chemical dosing and cleaning in place

Chemical dosing is a crucial part of municipal and industrial water and wastewater treatment processes.
The dosing of chemicals is necessary to disinfect the water and prevent biological growth (chlorination) but also to destabilize and agglomerate colloidal matter (coagulation/flocculation) as well as to avoid the precipitation of salts on the membrane surface (scale inhibitors through CIP) and to remove chlorine for the protection of the membranes by oxidation.
FIP studies and offers proper solutions for any chemical dosing system taking advantage of thermoplastic resins' versatility and the wide range of measurement and instrumentation.



FIP KEY PRODUCTS

DK

DIALOCK® 2-way diaphragm valve

Main features

- New body design for higher flow coefficient
- Ergonomic hand wheel and bonnet in PP-GR with PVC cap (excellent chemical resistant)
- Dialock® system: innovative handwheel with a patented locking device that allows it to be adjusted and locked in over 300 positions.
- DKL version with integrated Stroke limiter and Travel stop
- Customisation plate and TAG ready

M9.08

Dual-parameter pH/ORP and flow monitor

Main features

- Wide graphic display
- Multicolor backlight visualization
- Help on board
- Simultaneous measurement of pH/ORP and flow
- Mechanical relay for external device control
- Solid state relays for programmable alarms
- Multilanguage menu

VKD/CE

Electrically actuated DUAL BLOCK® 2-way ball valve

Main features

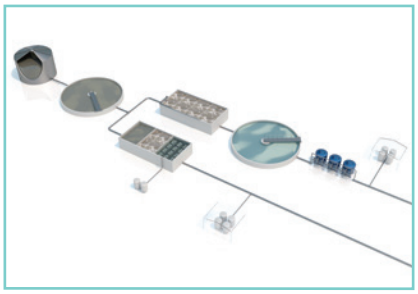
- Electric actuator selected by FIP according to its requirements of quality and reliability
- ON/OFF or modulating functions.
- Thermoplastic case to prevent corrosion; IP66 protection class
- Manual override as standard; availability of a wide range of accessories
- DUAL BLOCK® patented union nut locking system
- Floating full bore ball with high surface finish
- Integrated bracket for valve anchoring

FIP SYSTEM FOR CHEMICAL DOSING AND CIP

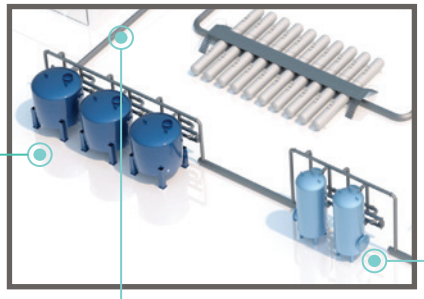
Ball valve	Diaphragm valve	Check valve	Pressure control valve	Pipe& fitting	PH/temperature monitoring	Flow monitoring	Flowmeter
VKD	DK	SXE	VCP	PVC-U	PH 660	F6.60	FS-FC
VXE	DK/CP	SSE	VSF	PVC-C	PH 870	F6.30	
VKR	DKM/CP			PP-H	M9.06	ULF	
VKR/CE				PE		F3.80	
VKD/CE-CP						F3.00	
						M9.02	
					M9.08		

Sand and carbon filtration

Sand and carbon filtration are typically used for achieving supplemental removals of suspended solids and pathogens not destroyed by the clariflocculation process.
Sand and carbon filtration are equipped with automated backwash system in order to keep a high level of efficiency.
All FIP valves may fulfill the requirement of the automation system and flow control.



FIP KEY PRODUCTS



DK/CP

Pneumatically actuated 2-way diaphragm valve

Main features

- New body design for higher flow
- coefficient
- High visibility optical position indicator
- Light and compact piston type actuator in PP-GR
- Long lifetime without maintenance ensured by the actuator design and the floating pin connection between the actuator stem and diaphragm.

F6.60

Magmeter flow sensor

Main features

- Accurate measurement of dirty liquids
- Pipe size range: from DN15 (0,5") to DN600 (24")
- Low pressure drop
- 4-20 mA, frequency or volumetric pulse output settable by friendly SW through USB connection
- Bi-directional flow measurement selectable
- Special versions for sea water treatment and for high temperature conditions

FK/CP

Pneumatically actuated butterfly valve

Main features

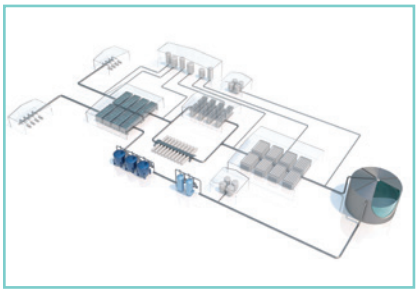
- Pneumatic actuator selected by FIP according to its requirements of quality and reliability
- Normally Closed, Normally Open or Double action Functions
- Valve body in PP-GR resistant to UV rays completely isolated from the fluid
- Valve disc in PVCU, PVCC, PPH or PVDF
- Stainless steel stem completely isolated from the fluid
- Availability of a wide range of accessories

FIP SYSTEM FOR SAND AND CARBON FILTRATION

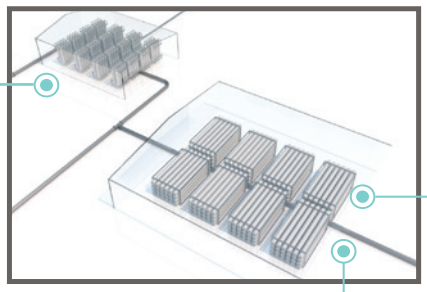
Ball valve	Butterfly valve	Diaphragm valve	Check valve	Pipe& fitting	PH/temperature monitoring	Flow monitoring	Flowmeter
VKD	FK	DK	SSE	PVC-U	PH 660	F6.60	FS-FC
VXE	FK/CE-CP	DK/CP	SXE	PVC-C	PH 870	F6.30	
TKD		DKM/CP	VR	PP-H	PH 222	F3.00	
VKD/CE-CP		VM		PE	M9.06	M9.02	
TKD/CE-CP		VM/CP			M9.08		

Membrane filtration

Membrane filtration is increasingly used for removal of bacteria, microorganisms, particulates and natural organic material.
Microfiltration (MF), Ultrafiltration (UF), Nano filtration (NF) and Reverse Osmosis (RO) are the most used membrane filtration in municipal and industrial water treatment plants with different kinds of pore sizes and pressures.
Reverse osmosis, commonly known for its use in potable water from seawater, can effectively remove under high pressure all inorganic contaminants. FIP studies and develops dedicated valves and instruments for potable water treatments.



FIP KEY PRODUCTS



VXE

Easyfit 2-way ball valve

Main features

- Easyfit ergonomic multifunctional handle with union nut tightening control
- Customisable Labelling System on the handle to identify the valve on the system according to specific needs
- PTFE ball seat system with locked carrier and valve stem with double O-Ring

M9.07

Dual-parameter conductivity and flow monitor & transmitter

Main features

- Wide full graphic display
- Multicolor backlight
- Help on board
- Simultaneous measurement of conductivity, temperature and flow
- Fast and intuitive calibration software
- Mechanical relay for external device control
- Solid State Relays for programmable alarms
- Multilanguage menu

TKD DESALINATION

DUAL BLOCK® 3-way ball valve

Main features

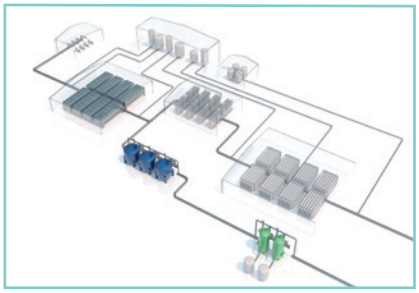
- Water sampling to check conductivity (through a reduced connection 1/4" threaded) without closing outlet thanks to the handle stop plate LTKD (no risk of over pressure and membranes damage)
- DUAL BLOCK® patented union nut
- locking system
- 4 PTFE ball seat system to guaranteeing optimal manageability and long working life

FIP SYSTEM FOR MEMBRANE FILTRATION

Ball valve	Butterfly valve	Diaphragm valve	Check valve	Pipe& fitting	PH/ temperature monitoring	Flow monitoring	Conductivity/ temperature monitoring	Flowmeter
VKD	FK	DK	SSE	PVC-U	PH 660	F6.60	C6.30	FS-FC
VXE	FK/CE-CP	DK/CP	SXE	PVC-C	PH 870	F6.30	C150-200	
TKD des.		DKM/CP	VR	PP-H	PH 222	F3.00	C100-300	
VKD/CE-CP				PE	M9.06	M9.02	M9.05	
TKD/CE-CP					M9.08			
						M9.07		

Ion exchanger

Ion-exchanger is used in water softening, nitrogen removal, heavy metal removal and demineralisation. When salts are dissolved in a solution they dissociate, separating into their constituent ions that can be removed through their interactions with a charged resin. Resin must be periodically regenerated by washing with an acid or basic solution to restore the original ionic form. This process, through the removal of all inorganic salts, produces "ultrapure water" similar in quality to distillate.
FIP provides versatile products and reliable solutions, simple to install and use but effective to the needs of Ion Exchange process.



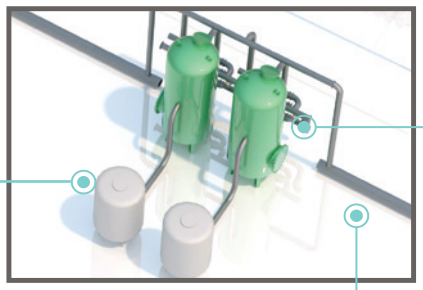
FIP KEY PRODUCTS

VKD

DUAL BLOCK® 2-way ball valve

Main features

- Ergonomic HIPVC handle equipped with removable tool to adjust the ball seat carrier.
- DUAL BLOCK® patented union nut locking system.
- SEAT STOP® ball carrier system that lets you micro-adjust ball seats
- Robust integrated brackets for valve anchoring
- Easy and quick automation via the Power Quick module



C300 and M9.05

Stainless steel conductivity sensor and monitor

Main features

- Stainless steel measuring surfaces
- Certified cell constant and temperature sensor included (Pt1000)
- Sensor in SS completely (C300)
- Monitor with UPW temperature compensation (ASTM D1125-19) and cell constant settable freely

DKP/CP

Pneumatically actuated 2-way diaphragm valve

Main features

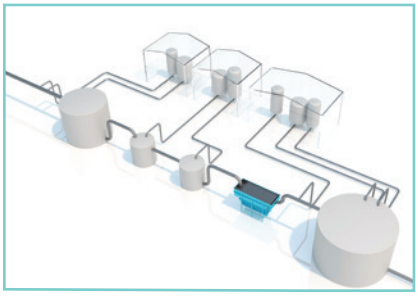
- Optimised fluid dynamic design: maximum output flow rate thanks to
- the optimised efficiency of the fluid dynamics that characterise the new
- internal geometry of the body
- Light and compact piston type actuator in IXEF® with high performance internal components.
- Absence of metal parts exposed to the external environment to prevent any risk of corrosion

FIP SYSTEM FOR ION EXCHANGER

Ball valve	Butterfly valve	Diaphragm valve	Check valve	Pipe& fitting	PH/ temperature monitoring	Flow monitoring	Conductivity/ temperature monitoring	Flowmeter
VKD	FK	DK	SXE	PVC-U	PH 660	F6.60	C6.30	FS-FC
VXE	FK/CE-CP	DK/CP		PVC-C	PH 870	F6.30	C150-200	
VKD/CE-CP		DKM/CP		PVDF	PH 222	F3.00	C100-300	
					M9.06	M9.02	M9.05	
					M9.08			
						M9.07		

Disinfection and pH adjustment

Disinfection systems are fundamental in potable water plants to protect consumers from pollution diseases and to prevent scaling. On the other hand, pH adjustment is very important in most industrial processes where wastewater has to follow environmental policies and specifications before being reused or returned to the water cycle. If the water is acidic, lower than 7, lime, sodium carbonate or sodium hydroxide are added to raise the pH, while when pH is too high, weak solutions of hydrochloric acid or sulfuric acid are necessary to lower it.
FIP can supply a highly qualified range of solutions and offer a wide range of products for disinfection and pH adjustment systems according to your requirements.



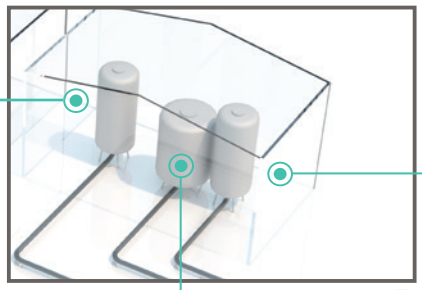
FIP KEY PRODUCTS

VKR

DUAL BLOCK® regulating ball valve

Main features

- Patented ball design to provide linear flow adjustment throughout its range of operation even when the valve is open just a few degrees
- DUAL BLOCK® patented union nut locking system
- Flow direction and opening angle indication plate with 5° resolution graduated scale for clear and accurate reading



PH 650/ 655

PVC-C body flat surface electrode

Main features

- Double junction technology
- High protection from process contamination
- Easy and quick installation system
- BNC connector
- Submersion or hot tap installation
- Low cost fittings

SXE

Easyfit True Union ball check valve

Main features

- Vertical and horizontal installation potential
- High surface finish ball shutter to grant a reduced valve maintenance.
- Ideal for conveying dirty fluids, even with suspended solids and filaments thanks to the special design that permits internal valve selfcleaning
- Customisable Labelling System on the body to identify the valve on the system according to specific needs

FIP SYSTEM FOR DISINFECTION AND PH ADJUSTMENT

Ball valve	Diaphragm valve	Check valve	Pressure control valve	Pipe& fitting	PH/ temperature monitoring	Flow monitoring	Flowmeter
VKD	DK	SXE	VCP	PVC-U	PH 870	F6.60	FS-FC
VXE	DK/CP	SSE	VSF	PVC-C	PH 650	F6.30	
VKR	DKM/CP			PP-H	PH 655	ULF	
VKR/CE				PE	M9.06	F3.80	
VKD/CE-CP						F3.00	
						M9.02	
					M9.08		

Thermoplastic materials
Key features

PVC-U

Developed in 1930 in Germany, PVC-U (rigid polyvinyl chloride –unplasticized) is obtained through the polymerization of a vinyl chloride monomer.
The presence of chlorine in the PVC-U molecule results in a high performance resin, in terms of thermal stability and chemical and mechanical resistance, up to temperatures of 60° C.

Material	PVC-U Unplasticized Polyvinyl Chloride
Coupling standards	Solvent welding
Range	from DN10 to DN300
Working Pressure classes	up to PN16
Working temperature range	From 0 °C to 60 °C

PVC-C

Developed in 1958 by the company BF Goodrich, now LUBRIZOL, PVC-C (post-chlorinated polyvinyl chloride) is obtained by chlorinating the PVC resin in suspension. During the transformation, alternate hydrogen atom monomers in the PVC molecular chain are replaced by chlorine atoms. The process produces a high performance resin with excellent thermal stability, chemical and mechanical strength up to temperatures of 100°C.

Material	PVC-C Chlorinated Polyvinylchloride, made of CORZAN® resin only
Coupling standards	Solvent welding
Range	from DN10 to DN300
Working Pressure classes	up to PN16
Working temperature range	From 0 °C to 100 °C

PP-H

Polypropylene is a thermoplastic and partially crystalline resin belonging to the family of polyolefins. PP is obtained through the polymerization of propylene (C_3H_6) with the aid of catalysts. For use in piping systems, the latest-generation Polypropylene Homopolymer variant, or PP-H, offers excellent performance at working temperatures of up to 100° C and a high resistance to chemicals due to the excellent physical and thermal characteristics of the resin.

Material	PP-H (100) Polypropylene homopolymer
Coupling standards	Socket and butt welding
Range	from DN10 to DN400
Working Pressure classes	up to PN10
Working temperature range	From 0°C to 100°C

PE

Polyethylene is a polyolefin, which forms a separate group among the semi-crystalline thermoplastics. Polyethylene, abbreviated PE, is an umbrella term for a group on individually distinctive PE types. PE-HD has a high density with an average density between 0.94-0.965 g/cm^3. The use of PE100 (density 0.958 g/ cm^3), due to its greater strength, is increasingly more common in pipe construction, especially in areas involving high pressure.

Material	PE100 Polyethylene high density
Coupling standards	Butt welding and electrofusion
Range	from DN10 to DN1200
Working Pressure classes	up to PN16
Working temperature range	From -40 °C to 60 °C

PVDF

PVDF (polyvinylidene difluoride) is a fluorinated and semicrystalline technopolymer containing 59% of its weight in fluorine.
This material is obtained through the polymerization of vinylidene fluoride. It boasts exceptional mechanical, physical and chemical resistance, guaranteeing excellent thermal stability up to 140° C.

Material	PVDF Polyvinylidene Fluoride - Compound Solef® 1008
Coupling standards	Socket and butt welding
Range	from DN10 to DN300
Working Pressure classes	up to PN16
Working temperature range	From -40 °C to 140 °C

The success of thermoplastic materials, together with the ease of installation, the minimum maintenance and long life, has brought them even in most conventional pressure pipeline systems such as Water and Wastewater treatment plants.

System overview
technical data and range

VALVES			
Product group	**Type**	**Range**	**Description**
Ball valves	VKD	DN 10÷100	Two way Industrial valve
	VKD/CE	DN 10÷100	Two way Industrial valve with electric actuator
	VKD/CP	DN 10÷100	Two way Industrial valve with pneumatic actuator
	VKR	DN 10÷50	Regulating valve
	VKR/CE	DN 10÷50	Regulating valve with modulating electric actuator
	TKD	DN 10÷50	Three way Industrial valve
	TKD/CE	DN 10÷50	Three way Industrial valve with electric actuator
	TKD/CP	DN 10÷50	Three way Industrial valve with pneumatic actuator
	VXE	DN 10÷100	Two way Universal valve
	VXE/CE	DN 65÷100	Two way Universal valve with electric actuator
	VXE/CP	DN 65÷100	Two way Universal valve with pneumatic actuator
	VEE	DN 10÷100	Two way Water valve
Butterfly valves	FK	DN 40÷300	Industrial valve
	FK/CE	DN 40÷300	Industrial valve with electric actuator
	FK/CP	DN 40÷300	Industrial valve with pneumatic actuator
	FE	DN 40÷200	Water valve
	FE/CE	DN 40÷200	Water valve with electric actuator
	FE/CP	DN 40÷200	Water valve with pneumatic actuator
Diaphragm valves	DK	DN 15÷65	Industrial diaphragm valve
	DK/CP	DN 15÷20	Industrial diaphragm valve with pneumatic actuator piston type
	DKM/CP	DN 25÷65	Industrial diaphragm valve with pneumatic actuator diaphragm type
	DKP/CP	DN 25÷65	Water diaphragm valve with pneumatic actuator piston type
	DKD/CP	DN 15÷65	Water diaphragm valve with pneumatic actuator direct acting
	VM	DN 80÷100	Industrial diaphragm valve
	VM/CP	DN 80÷100	Industrial diaphragm valve with pneumatic actuator diaphragm type
	CM	DN 12÷15	Compact Industrial diaphragm valve
	CM/CP	DN 12÷15	Compact Industrial diaphragm valve with pneumatic actuator piston type
Check valves	SR	DN 15÷50	Ball check valve
	SXE	DN 10÷100	True union ball check valve
	SSE	DN 10÷100	True union spring check valve
	CR	DN 40÷300	Wafer check valve
	VR	DN 10÷100	Angle seat check valve
Pressure control valves	SV	DN 15÷25	Angle seat relief valve
	VSF	DN 10÷100	Diaphragm relief valve
	VCP	DN 10÷100	Diaphragm back valve
	VPR	DN 10÷100	Pressure reducing valve
Ancillary valves	RV	DN 10÷100	Sediment strainer
	VV	DN 10÷50	Angle seat valve
	VA	DN 10÷50	Air release valve
	VZ	DN 10÷50	Foot valve

PN: nominal pressure with water at 20 °C

Actuation			PVC-U	PVC-C	PP-H	PVDF
Hand			PN 16	PN 16	PN 10	PN 16
	Electric		up to PN 16	up to PN 16	PN 10	up to PN 16
		Pneumatic	up to PN 16	up to PN 16	PN 10	up to PN 16
Hand			PN 16		PN 10	PN 16
	Electric		up to PN 16		PN 10	up to PN 16
Hand			PN 16	PN 16	PN 10	
	Electric		up to PN 16	up to PN 16	PN 10	
		Pneumatic	PN 16	PN 16	PN 10	
Hand			PN 16	PN 16		
	Electric		up to PN 10	up to PN 10		
		Pneumatic	up to PN 6	up to PN 6		
Hand			PN 16			
Hand			up to PN 16	up to PN 16	up to PN 10	up to PN 16
	Electric		up to PN 16	up to PN 16	up to PN 10	up to PN 16
		Pneumatic	up to PN 16	up to PN 16	up to PN 10	up to PN 16
Hand			up to PN 16			
	Electric		up to PN 16			
		Pneumatic	up to PN 16			
Hand			PN 10	PN 10	PN 10	PN 10
		Pneumatic	PN 10	PN 10	PN 10	PN 10
		Pneumatic	PN 10	PN 10	PN 10	PN 10
		Pneumatic	PN 10		PN 10	
		Pneumatic	PN 8			
Hand			up to PN 10	up to PN 10	up to PN 10	up to PN 10
		Pneumatic	up to PN 6	up to PN 6	up to PN 6	up to PN 6
Hand			PN 6	PN 6	PN 6	PN 6
		Pneumatic	PN 6	PN 6	PN 6	PN 6
Self					PN 10	PN 16
Self			PN 16	PN 16		
Self			PN 16			
Self			PN 5			
Self			up to PN 16		PN 16	
Self			PN 16			
Self			up to PN 10		up to PN 10	up to PN 10
Self			up to PN1 0		up to PN 10	up to PN 10
Self					up to PN 10	up to PN 10
-			up to PN 16	PN 16 DN 10-50	up to PN 10	
Hand			up to PN 16			
Self			PN 16			
Self			PN 16			

System overview
technical data and range

PIPES AND FITTINGS	
Product group	**Description**
Fittings	Solvent Welding ISO-DIN standard
	Adaptor fittings Solvent Welding/Threaded ISO-UNI/BSP standard
	Solvent Welding BS Imperial standard
	Socket Welding ISO-UNI Standard
	Adaptor fittings Socket Welding/Threaded ISO-UNI/BSP Standard
	Butt Welding ISO-UNI Standard
	Adaptor fittings Butt Welding/Threaded ISO-UNI/BSP Standard
Pipe	Solvent, Butt and Socket Welding ISO-DIN Standard

MEASUREMENT AND INSTRUMENTATION				
Product group	**type**	**Description**	**M9.00**	**M9.02**
Flow	F3.00	Paddlewheel Flow sensor	●	●
	F3.20	High pressure Paddlewheel sensor	●	●
	F6.30	Paddlewheel Flow Transmitter		
	F3.10	Paddlewheel Mini Flow sensor	●	●
	F3.05	Paddlewheel Flow switch		
	F6.60	Magmeter Flow Sensor		●
	F6.61	Hot Tap Magmeter Flow Sensor		●
	F111	Hot Tap Paddlewheel and Turbine Flow sensor	●	●
	ULF	Ultra Low Flow sensor	●	●
	F3.80	Oval Gear Flow sensor		●
pH/ORP	pH/ORP 200	Epoxy body Bulb electrodes		
	pH/ORP 400	Glass body Bulb electrodes		
	pH/ORP 600	PVCC Body Flat Surface		
	pH/ORP 800	Ryton Body Flat Surface electrodes		
Conductivity	C150-200	Graphite or Platinum Conductivity sensors		
	C100-300	Stainless steel Conductivitysensors		
	C6.30	Inductive Conductivity transmitter		

	PVC-U	PVC-C	PP-H	PVDF	PE
	PN 16 DN8÷500	PN 16 DN10÷200			
	PN 16 DN10÷100	PN 16 DN10÷50			
	PN 16 DN10÷100				
			PN 10 DN15÷100	PN 16 DN15÷100	
			PN 10 DN15÷50	PN 16 DN15÷100	
			up to PN 10 DN15÷400		up to PN16 DN10÷1200
			up to PN 10 DN15÷50		
	up to PN 16 DN10-300 *	up to PN 16 DN10÷200	up to PN 10 DN15÷400	up to PN16 DN15÷100*	up to PN 16 DN10-600 *

	M9.03	M9.20	M9.50	M9.05	M9.06	M9.07	M9.08	M9.10
	●	●	●			●	●	●
	●		●			●	●	●
	Transmitter / PLC							
	●		●			●	●	●
	●		●			●	●	●
	●		●			●	●	●
	●	●	●			●	●	●
	●	●	●			●	●	●
	●		●			●	●	●
					●		●	
					●		●	
					●		●	
					●		●	
				●		●		
				●		●		
	Transmitter / PLC							●

Potable water plant
Kingdom of Saudi Arabia

PROJECT

Marafiq Power and Water Utility Company for Jubail and Yanbu (Kingdom of Saudi Arabia-KSA) has assigned this project to Acciona Agua (Spain) in consortium with the local company PCMC at the end of 2012.

This plant, the first for Acciona Agua in the Kingdom, has been constructed to serve the city of Al Jubail and its associated industrial complex, located in the Eastern Province of the Saudi coast of the Arabian Gulf and it came into operation during 2015.

Acciona Agua is a world leader in reverse osmosis seawater and brackish-water desalination with more than 70 desalination plants with a total production of drinking water of 1.9 million cubic meters per day.

Jubail phase IV is a **potable water plant** with a capacity of 100,000 m^3/d based on reverse osmosis technology for the seawater treatment.

TECHNICAL SOLUTION

FIP has supplied to Acciona and PCMC different kinds of manual and actuated valves in PVC-C mainly for the chemical dosing systems such as ferric chloride, sodium hydroxide, sodium bisulphite and antiscalant.

Specifically the consortium used manual and electrically actuated ball valves (VKD and VKD/CE series) that, through the DUAL BLOCK® patented lock system, ensure union nut tightening hold even in critical conditions such as vibrations or thermal expansion.

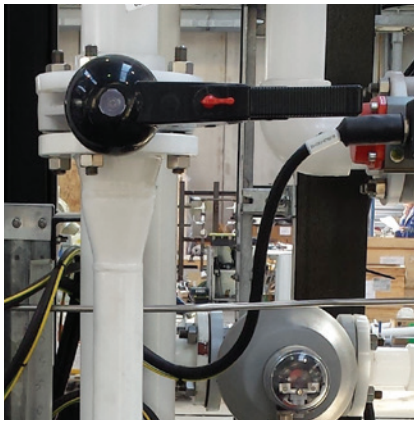
Ball check valves (SXE series), diaphragm valves (VM series), pipes and fittings complete the thermoplastic package for this crucial part of the process.

For the brine handling of the clariflocculation system, the consortium has decided to use PVC-C industrial butterfly valves (FK series - DN 150) taking the advantages of easier installation and corrosion resistance.

PRODUCTS SELECTION

Type	Model	Material	Actuation	Connection	Size	Gasket
Two way ball valves	VKD	PVC-C	Manual	Socket welding	up to DN80	EPDM
Two way ball valves	VKD/CE	PVC-C	Electric	Socket welding	up to DN50	EPDM
Butterfly valves	FK	PVC-C	Manual	Socket welding	up to DN150	EPDM
Diaphragm valves	VM	PVC-C	Manual	Socket welding	up to DN50	EPDM
Ball check valves	SXE	PVC-C	Manual	Socket welding	up to DN50	EPDM
Sediment strainer valves	RV	PVC-C	-	Socket welding	up to DN80	EPDM
Pipes & fittings	-	PVC-C	-	Socket welding	up to DN80	EPDM

Onshore oil field
Italy



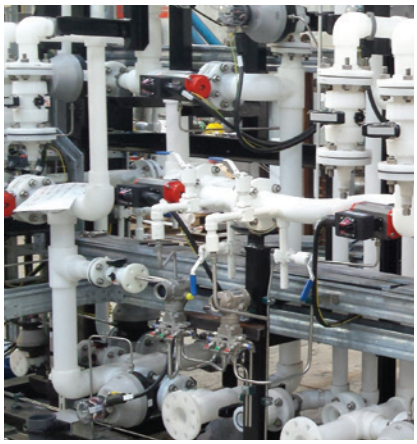
PROJECT

The development of the project, with an approximate value of 2 billion €, brings together large international oil groups. Alongside TOTAL, the operator in charge of developing the project, Shell (25%) and Mitsui E&P Italia B S.r.l. (25%) are also involved.

The plant system, among the most advanced ones in the oil sector, will have a daily production capacity of approximately 50,000 barrels of oil, 230,000 m^3 of natural gas, 240 tons of LPG and 80 tons of sulphur.

The industrial water treatment (IWT) auxiliary plant through demineralisation process by Ion Exchanger allows to obtain high water quality for Bono Energia's boilers. These boilers will provide steam for the oil field's start-up and peak loads.

The feed water quality is important for the heat-transfer efficiency of the boilers, preventing corrosion and deposition of precipitated scale.



Tempa Rossa is an oilfield project located in Basilicata, southern Italy, where the **industrial water treatment** by Ion Exchanger needs frequent resins' regeneration.

TECHNICAL SOLUTION

FIP has taken part in this IWT package supplying thermoplastic products in PVDF for the skids of resins' regeneration for the Ion exchanger.

Specifically FIP has supplied manual and pneumatically actuated ball valves (VKD and VKD/CP series), butterfly valves (FK and FK/CP series) and diaphragm valves (VM and VM/CP series).
The skids have been completed with pipes and fittings in PVDF as well.

Furthermore, to satisfy costomer's needs, FIP has studied and developed customized products (e.g special ball valves and flanges).

In this way subcontractor and end-user have taken the advantages of thermoplastic resins' versatility together with the ease of installation, the minimum maintenance and long life.

PRODUCTS SELECTION

Type	Model	Material	Actuation	Connection	Size	Gasket
Two way ball valves	VKD	PVDF	Manual	Flanged	up to DN100	FPM
Two way ball valves	VKD/CP	PVDF	Pneumatic	Flanged	up to DN100	FPM
Butterfly valves	FK	PVDF	Manual	Flanged	up to DN100	FPM
Butterfly valves	FK/CP	PVDF	Pneumatic	Flanged	up to DN100	FPM
Diaphragm valves	VM	PVDF	Manual	Flanged	up to DN100	FPM
Diaphragm valves	VM/CP	PVDF	Pneumatic	Flanged	up to DN100	FPM
Pipes & fittings	-	PVDF	-	Socket welding	up to DN100	FPM

LEGWTPROM - 05/2016

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