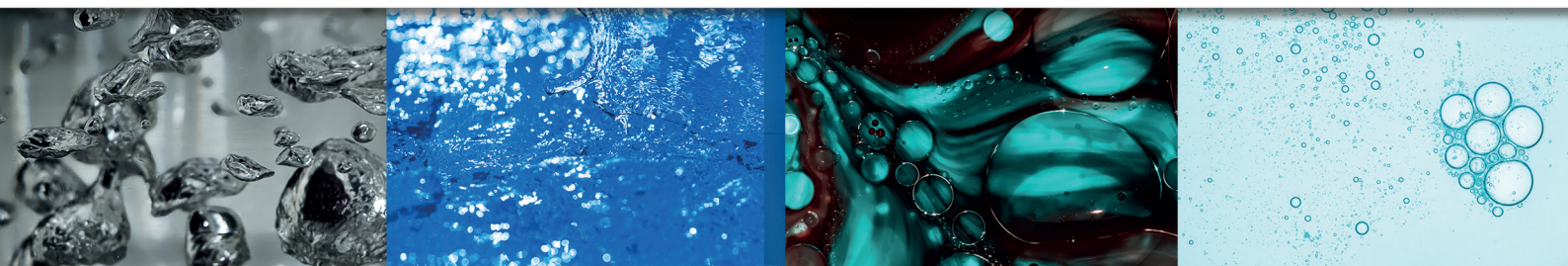




Water Technology

INDUSTRIAL WATER TREATMENT



ECOLOGICAL CLEANING SOLUTIONS

 SWISS QUALITY

A TEAM OF EXPERTS AT YOUR SERVICE

From A to Z, benefit from NGL's support in water treatment or purification and «Zero Liquid Discharge» projects.

Our specialists design treatment plants tailored to the volume of water to be treated, the type of effluent and the customer's constraints, enabling them to reduce their environmental impact. For most manufacturing processes using aqueous solutions (soluble oils, electroplating, tumbling, electropolishing or equipment and floor cleaning), NGL equipment can reduce the pollutant load in terms of heavy metals, hydrocarbons, COD, etc...

Our expertise guarantees you the choice of technology best suited to the type of discharge and pollutants present. NGL Water Technology offers unique, cutting-edge solutions to address each of your problems and optimize the use of your industrial water.



AN ENGINEERING OFFICE TO ANALYZE YOUR NEEDS

Contact NGL to discuss your project. Our experts will pay attention to your needs and offer the best options available:



- analyses of your water to measure its content of pollutants targeted by regulations
- a technical feasibility study of optimal treatment to bring your discharges into compliance
- solutions adapted to your volumes and types of wastewater: external, physico-chemical or evapo-concentration treatment



SOLUTIONS

Process water preparation : pre-treatment stations and AQUA4D® to control inlet water quality.

Water recycling: Nanoclean RW to drastically reduce your water consumption (between 70% and 95%).

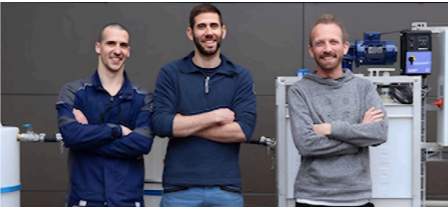
Wastewater: physico-chemical stations and evaporators to treat industrial wastewater before discharge to the sewer.



APPLICATIONS

Our key industry sectors:

- Watchmaking
- Jewellery
- Luxury accessories
- Medical devices



WHY NGL?

Customers have praised NGL's reactivity. Our after-sales service is dedicated to fixing malfunctions in the shortest possible time.

The NGL Academy supports you with its training module on industrial water treatment technologies and regulations.

PRE-TREATMENT - PROCESS WATER

PRE-TREATMENT STATIONS: OSMOSER, SOFTENER, DEMINERALIZER, UV DISINFECTION

Our compact, modular industrial water treatment plants are suited for a various range of process water qualities: softened and osmosis water with Nanoclean RO and ultra-filtered water with Nanoclean EW.

UV disinfection system: to maintain their quality while being used in a closed loop, distilled or DI water can be treated with UVs, preventing bacterial growth without the addition of chemicals.



	TAP WATER	AQUA4D® WATER	SOFTENED WATER	RO WATER	DEMINERALIZED WATER
Production mode			Ion exchange resin	Reverse osmosis	Ion exchange resin
pH	6,5 - 8,5	6,5 - 8,5	6,5 - 8,5	6,5	6,5
Conductivity at 25°	200 - 800 µS/cm	200 - 800 µS/cm	200 - 800 µS/cm	5 - 20 µS/cm	0,055 µS/cm - 2 µS/cm
CaCO3	60 - 180 mg/l	60 - 180 mg/l	<60 mg/l	0	0

AQUA4D® WATER

- Prevents biofilm formation and limescale deposits
- Removes calcite deposits and biofilms.

AQUA4D®

Maintains chemical composition of tap water while avoiding limescale and biofilm.

SOFTENED WATER

- Quality and conductivity characteristics similar to the tap water from which it is made
- Except calcium and magnesium content replaced by sodium during softening
- Reduces salt deposits on parts

SOFTENER

Reduces water hardness by replacing calcium and magnesium with sodium.

RO WATER

- Generated by filtration through low porosity membranes
- >95% of salts retained; conductivity: 5-20 µS/cm
- No organic matter or bacterial contamination

OSMOSIS UNIT

Removes most of the organic matter, colloids, suspended particles and minerals.

DEMINERALIZED WATER

- Generated and recycled using ion exchangers (mixed bed resins)
- No salt content; conductivity: 0,055 to 2 µS/cm
- > Requires UV treatment and activated carbon

RESIN & ACTIVE CARBON

Removes dissolved mineral residues on ion exchange resin, and organic compounds with activated carbon.

PRE-TREATMENT SYSTEM: AQUA4D®

AQUA4D® technology solves the most recurrent problems in water pipes, cleaning lines and other hydraulic systems: limescale and biofilm - all without chemicals or costly maintenance.



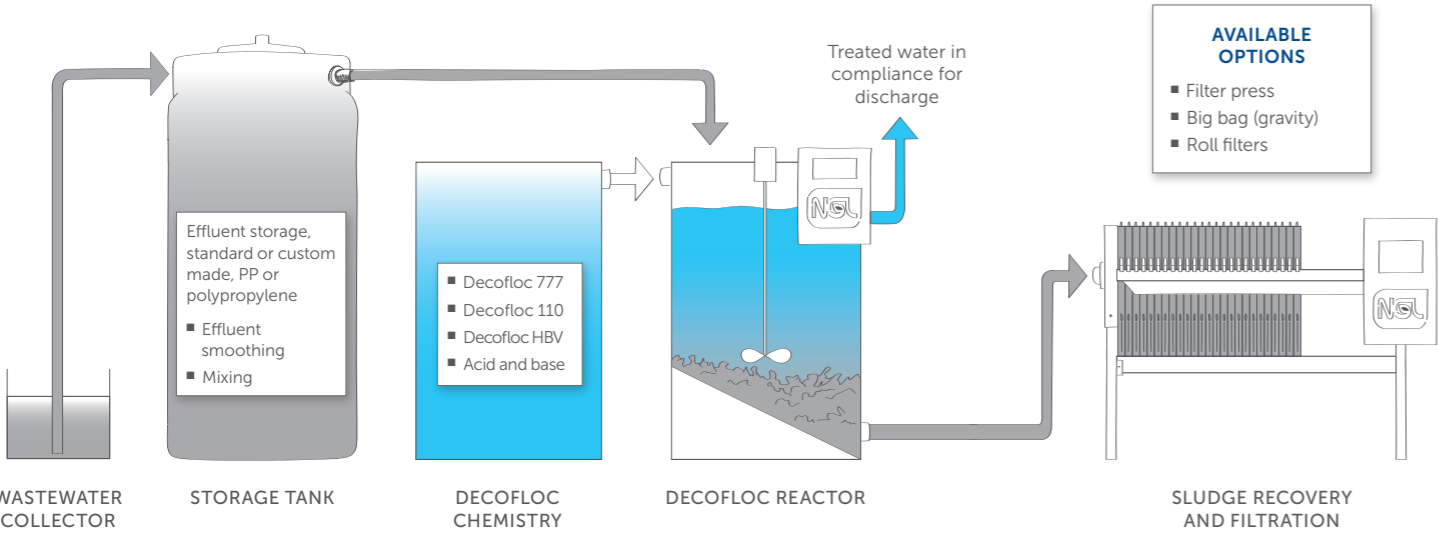
TREATMENT - INDUSTRIAL WASTEWATER

DECOFLOC PHYSICO-CHEMICAL STATIONS

The main pollutants : COD, BOD5, Nitrogen, Phosphorus, TSS, pH, suspended solids, heavy metals... are largely eliminated by pH correction, coagulation/flocculation, decantation and filtration stages, and more than 95% of the valuable substances present in the water can be recovered.

If the residual COD is too high or if cyanide is present, post-treatment systems such as activated carbon, various types of oxidation or evapo-concentration complete the process.

Industrial controller: programmable by means of probes and sensors to regulate all circuits. This type of automation also enables remote control and easier operation thanks to a touch screen.

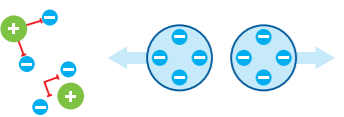


CHEMICALS DECOFLOC: THE PROCESS



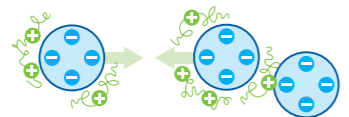
DECOMPLEXATION

Separates chelated metals into negatively charged particles with DECOFLOC 777.



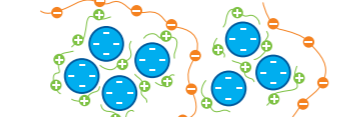
COAGULATION

Agglomerates dissolved metals with coagulating salts from DECOFLOC 110.



FLOCCULATION

Floculates particles with Decfloc HBV so they attain a sufficient mass and size to sink.



Liquid or powder version

EVAPORATORS

Separation of the aqueous phase from the process pollutants by distillation, which takes place under vacuum to bring the solution to the boiling point at a temperature of 35 to 38°C.

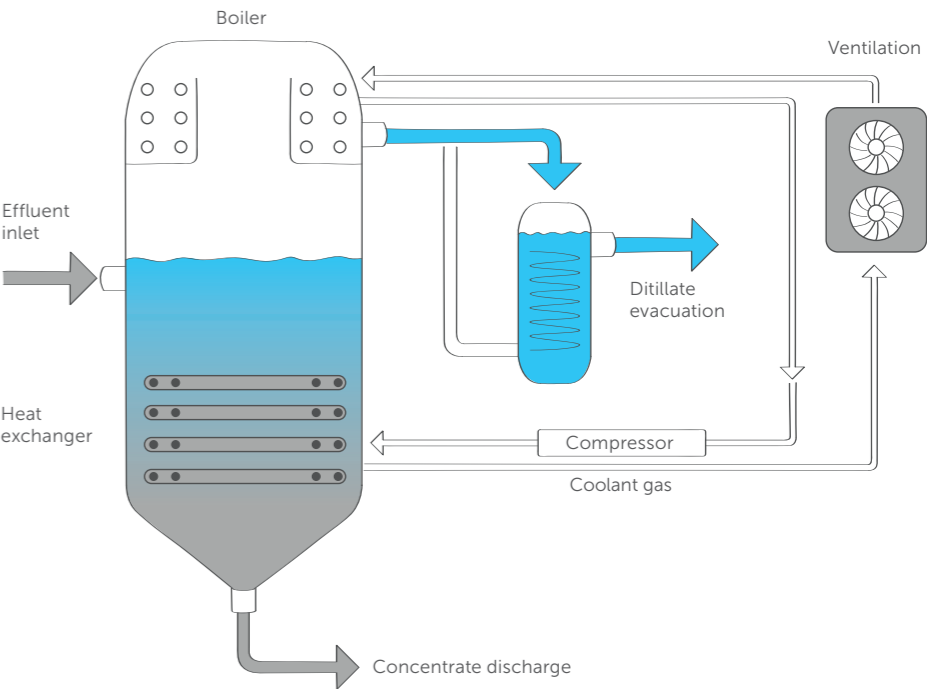
The distillate obtained has similar characteristics to demineralized water and can therefore be reused in the production process. Vacuum evaporators recover around 90-95% of treated wastewater in distillate form.

Industrial controller: simplified, automated control for 24-hour operation and optimum management of the energy required for treatment.



TYPES OF EFFLUENTS

- Water containing heavy metals (Pb, Cr, Cu, etc.)
- Concentrates from demineralization processes
- Rinse water from cleaning processes
- Water from cleaning equipment or floors
- Treatment of soluble oils



CONTAINERISED WATER TREATMENT STATIONS WITH REMOTE CONTROLLED AUTOMATION

Turnkey units with a capacity of 1 to 10 m³/d.

20-foot container including reactor, sludge tank and filter press.

Freeze-proof, silent, programmable, to avoid any external nuisance.



POST-TREATMENT - WATER RECYCLING

RECYCLING STATIONS (NANOCLEAN RW)

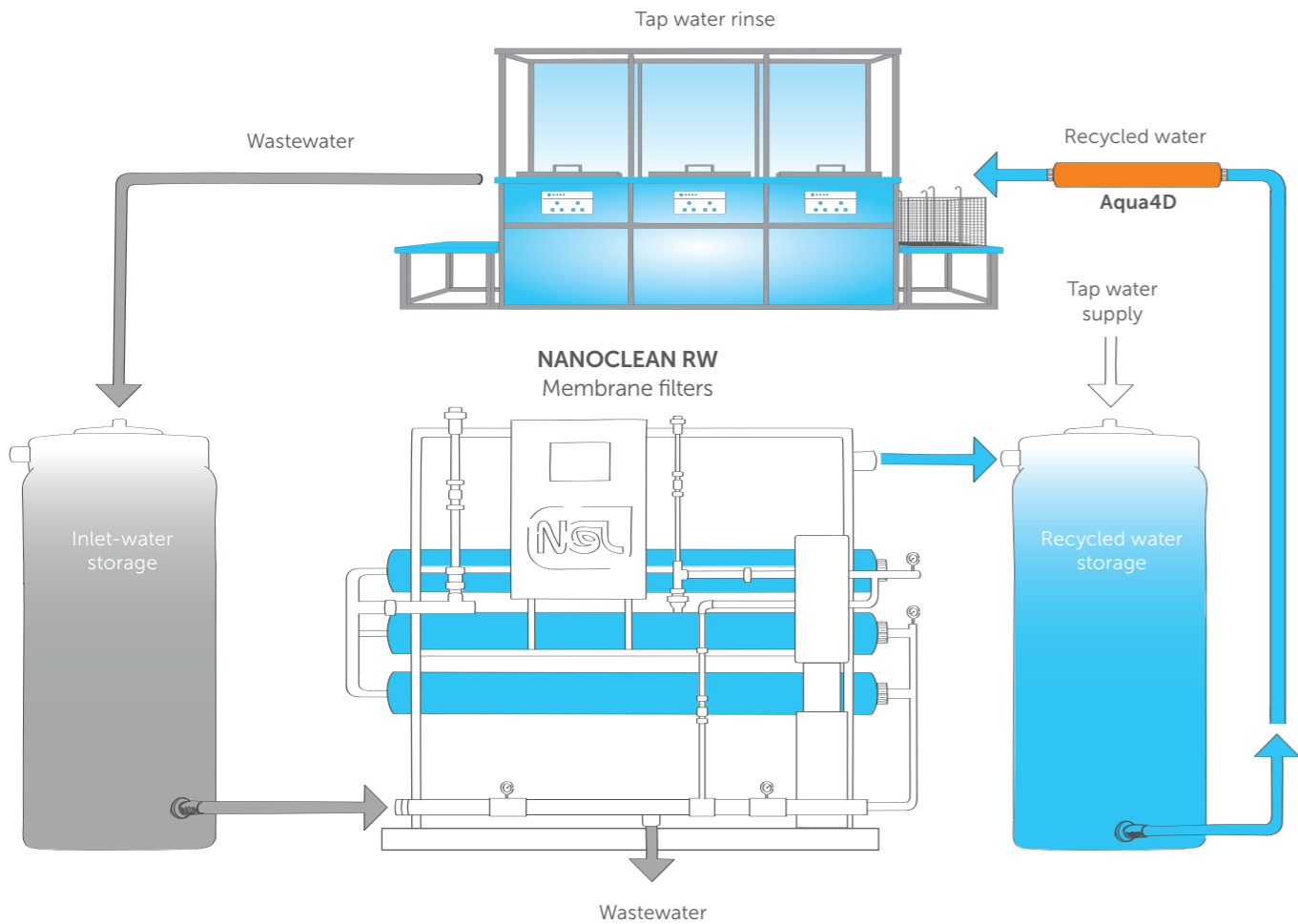
Nanoclean RW continuously treats lightly contaminated water, such as rinse water from cleaning machines.

Programmable membrane filtration enables continuous water treatment for reuse, **reducing water consumption from 70% to 95%.**

Industrial controller: programmable remotely or directly via the ergonomic control panel for simplified management.



A LOOP FOR RECYCLING YOUR RINSE WATER



CONSUME BETTER AND LESS!

Nanoclean plants provide long-term control of your process water quality and reduce your water requirements.



« ZERO LIQUID DISCHARGE » STATIONS

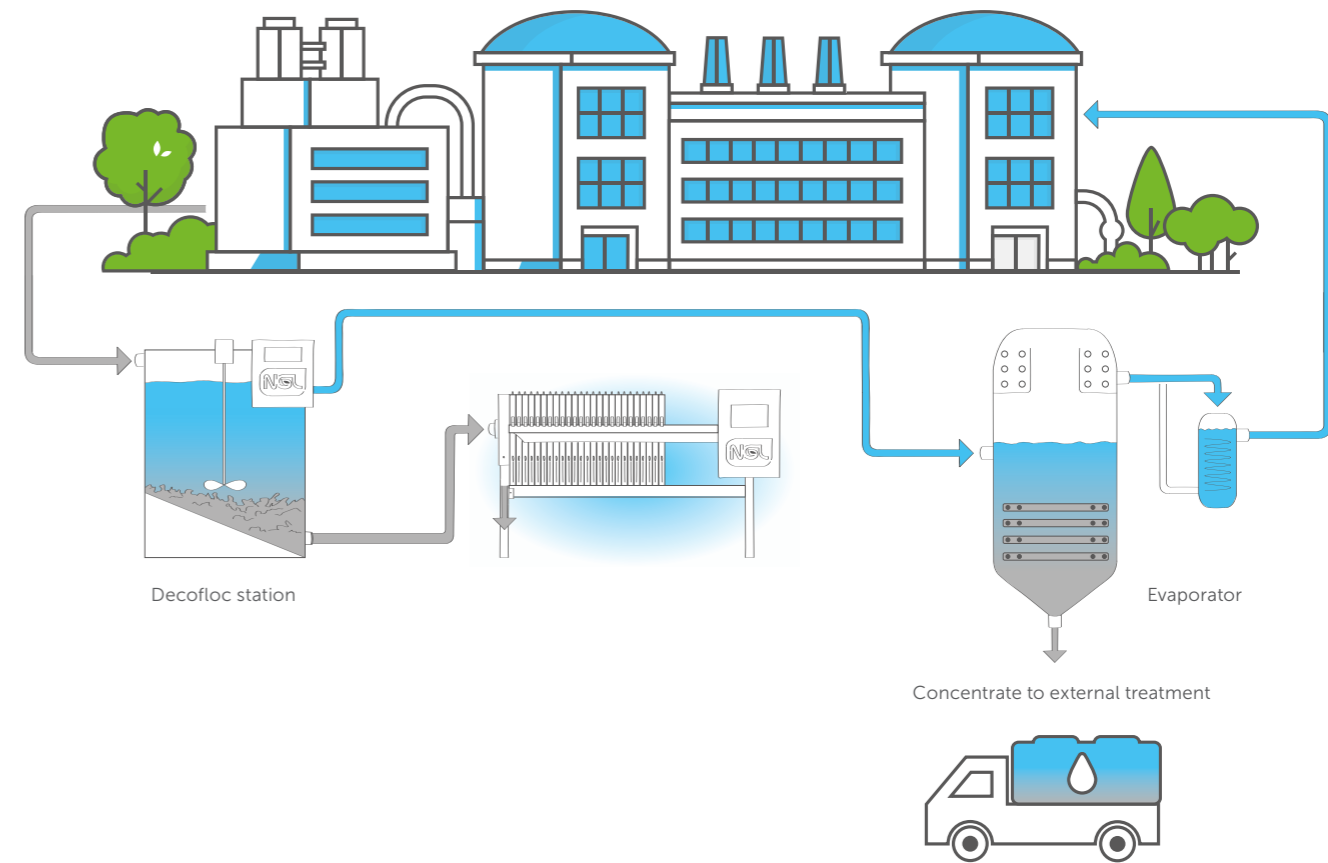
NGL puts its expertise in « zero liquid discharge » (ZLD) at your disposal to enable you to control, reduce and effectively treat your flows.

These installations enable industrial sites to drastically reduce their impact on water resources. ZLD plants are complex projects. Rely on NGL's professionals to ensure regulatory compliance of your discharges, particularly in urban areas or close to natural sites.

Automation, sizing, processes, chemicals, etc... NGL takes into account all the parameters necessary for the success of a « zero liquid discharge » project.



A LOOP TO TREAT YOUR INDUSTRIAL EFFLUENT



TYPES OF WASTEWATER

- Foundry water
- Electroplating rinse waters
- Soluble oils
- Floor and machine cleaning
- Rinsing waters
- Cleaning baths
- Vibratory polishing waters



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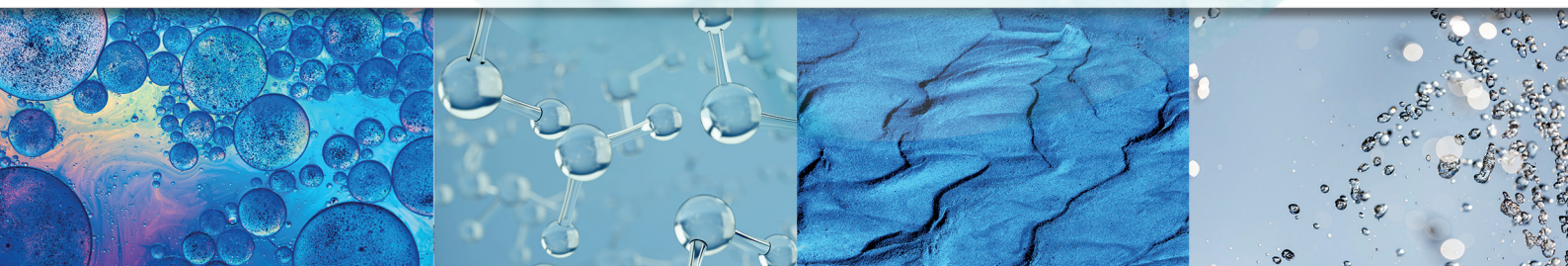
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