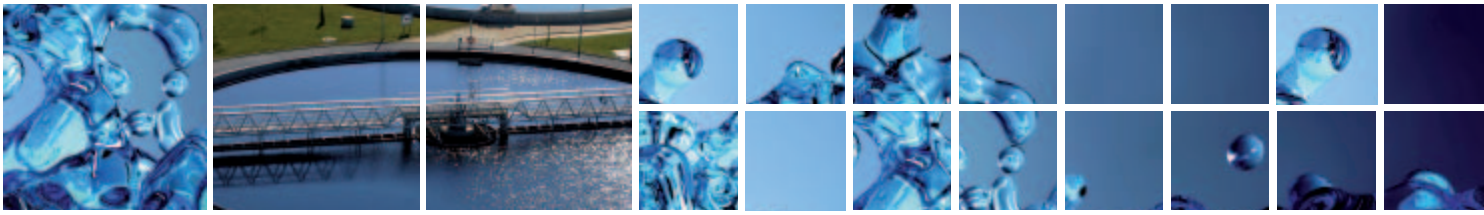
AQUASOURCE

APPLICATION BROCHURE: REUSE
MUNICIPAL WASTEWATER



Why do we need to recycle wastewater ?

On the arid area, due to water scarcity, the treated wastewater can be used for a reuse application such as land or golf irrigation…

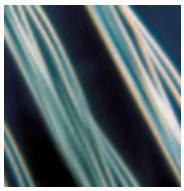
Indeed, water recycling allows to avoid water shortage and protect water resources.

Water recycling is safe, environmentally sustainable and cost effective for decision-makers who cares about environment resources. For operating cost reduction, municipalities and industries are ready to invest on reuse installation to reduce their fresh water consumption. In this context, Degrémont Technologies can implement different solutions to contribute to integrated water management.

OUR SOLUTION TO YOUR PROBLEM

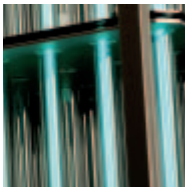
Thanks to a comprehensive portfolio, Degrémont Technologies can offer several equipments for Water reuse applications.
Degrémont Technologies solutions, are state-off-the art for water reuse projects and provide multiple barriers to pathogens, organics and other contaminants commonly found in wastewater effluent. For this we can offer two different technologies, membranes and UV. Depending on the raw water quality, as well as the treated water quality expected, we can use one or the other technology.

MEMBRANES



Ultrafiltration membranes are used as secondary or tertiary treatment. They bring such a high quality treated water that it can be safely reuse for any other non drinking application.
Within the Degrémont Technologies-Aquasource range, all the membrane systems dedicated to water reuse are identified under the unit name Re-Source™. Re-Source™ is designed to ensure the best pretreatment technology and to ensure the best removal of particles and micro-organisms. Degrémont Technologies' Ultrafiltration units have flow rates from 6 to 90 m^3/hour.

UV



UV systems disinfect by inactivating pathogenic microorganisms such as viruses, bacteria and parasites which may be in the water and may cause waterborne disease.
In the broad light Spectrum, the UV-C wavelength (200-280 nm) has been proven to be the most efficient wavelength to inactivate microorganisms by damaging the nucleic acids (DNA or RNA), which in turns the organism's ability to reproduce.
The UV has the advantage to produce no measurable change in disinfection by-products formed.
And thanks to his small foot print, the UV technology can be easily integrated in an existing Water Treatment Plant.
Within the Degrémont Technologies-Ozonia range, all UV systems are identified under the name AQUARAY®.

MEMBRANES

This filtration technique involves passing water through porous and hollow fibres membranes. The wall acts as a filter for all particles larger than 0.02 micron: pollen, algae, parasites, bacteria, viruses, germ and large organic molecules.

Membrane treatment guarantee high water quality and an increase trust of end users in safety of recycled water.

Materials	Hydrophilic polysulfone
Technology	Hollow fiber Inside-Out
Membrane cut off	0.02 µm
Guaranteed Turbidity	< 0.1 NFU
Bacteria & Cysts removal	> 6 Log (>99,9999%)
Viruses removal	> 3 Log (>99,9%)
SDI	< 3

UV

Microorganisms	UV-C Inactivation @ 40mJ/cm² dose
Escherichia Coli	> 4 Log (>99,99%)
Staphylococcus Aureus	> 4 Log (>99,99%)
Streptococcus Faecalis	> 4 Log (>99,99%)
Poliovirus Type 1	> 4 Log (>99,99%)
indigenous colipahges	> 4 Log (>99,99%)
Vacine poliovirus	> 4 Log (>99,99%)
MS-2	< 3 Log (<99,9%)
Bacilius Subtilis	< 2 Log (<99%)
Adenovirus Type 40	< 2 Log (<99%)

The UV germicidal effect is linked to the Dose (in mJ/cm²) which is the factor of the UV intensity and the contact time in the reactor. As you will see on the table beside, the germicidal effect depends on the microorganism type (Virus, Protozoa, Bacteria, …). To optimize the UV dose and by consequence the reactor efficiency, we are using advanced Computerized Fluid Dynamic modeling tools.

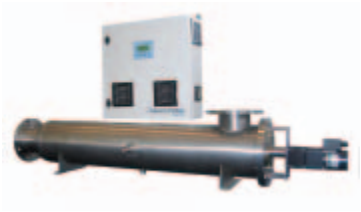
And to validate theoretical and C.F.D. results, Degrémont Technologies implement third party validations by biodosimetry tests.

FOR ADDITIONAL INFORMATION

To obtain more information on our UV and membranes solutions for your application, you have several possibilities :

- Consult the equipment/process brochures included in our Degremont Technologies Catalogue
- Go to our online Catalogue **(www.degremont-technologies.com)**
- Contact our UV and membranes specialists

RE-SOURCE™



Aquaray® SLP-WW

Aquaray® 40HO

Aquaray® 3X

Contacts

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