

Advanced Water Technology

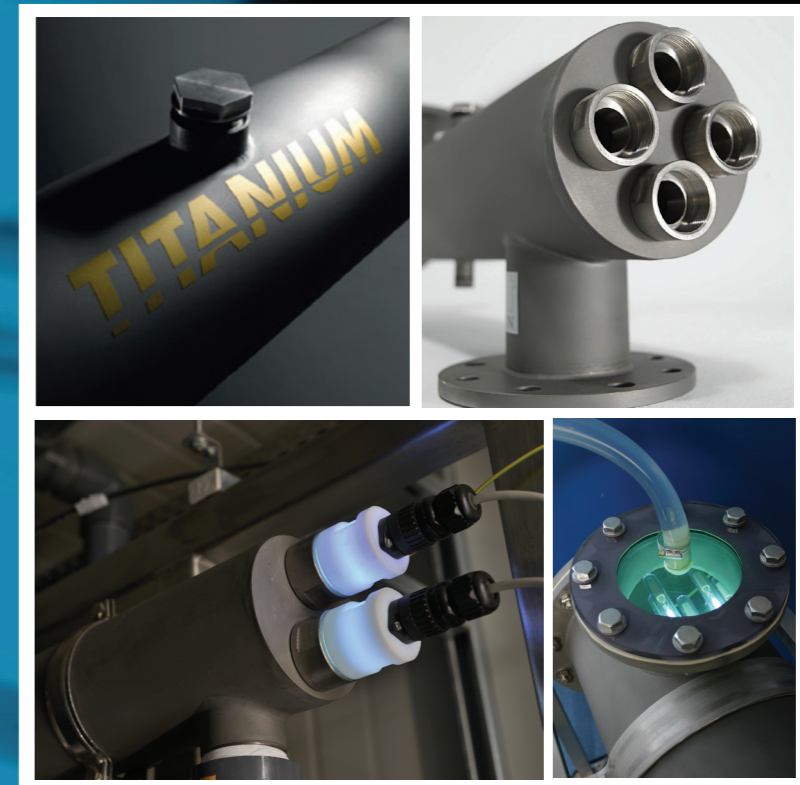
Enwa design, manufacture and deliver environmentally friendly water treatment solutions to numerous sectors, on land and offshore. We are specialized in solutions for maritime vessels and oil & gas installations where desalination of water and water quality is of importance.

We work closely with our customers which enables us to provide efficient systems for specific water treatment needs.

Enwa Titanium AOP

Cost effective and environmental friendly gatekeeper solution for disinfection of drinking water

h2o.TITANIUM



- Efficient • Environmental friendly
- Cost effective • Safe • Flexible

Enwa AOP_Brochure_02_10x11_1716



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ADVANCED WATER TECHNOLOGY



Clean water -no chemicals

Why disinfection?

The main objective for drinking- and potable water treatment is to assure hygienically safe water, and disinfection is the most common remedy for preventing the spread of waterborne diseases from pathogenic microorganisms.



AOP – Advanced Oxidation Process

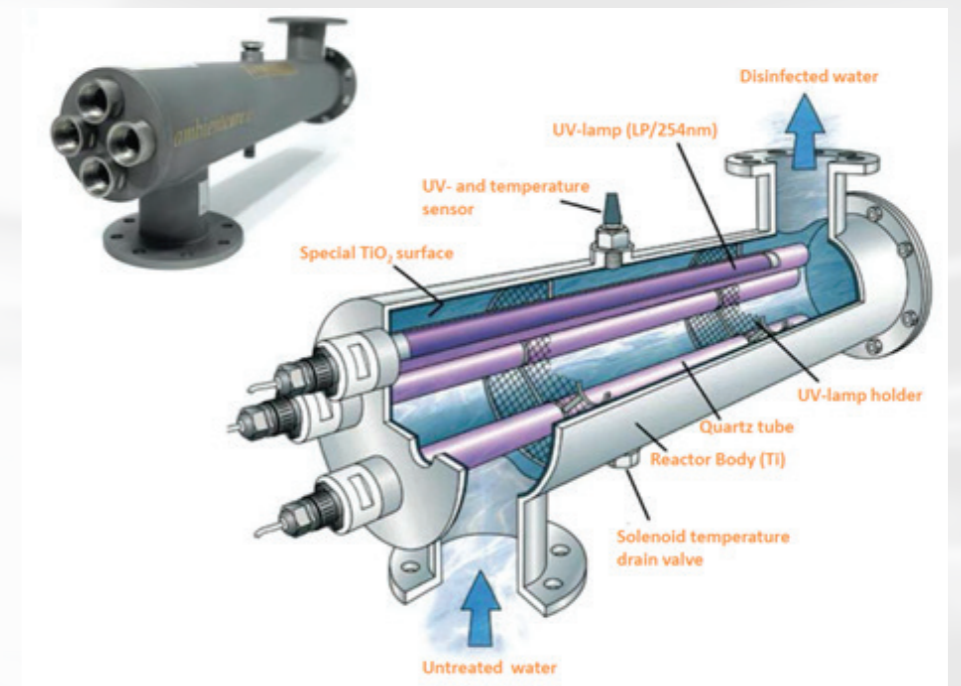
- Oxidation of microorganisms and organic contaminants is one of the most powerful disinfection methods available today.
- AOP uses the strong oxidation capabilities of OH-radicals (•OH) to inactivate and decompose microorganisms and other organic substances to non-hazardous and inorganic substances. •OH is the second strongest oxidant in nature, only fluorine (F₂) is stronger.
- The product h2o.titanium generates •OH by using the energy from UV- radiation to start a photo catalytic process between the titanium oxide surface (TiO₂) inside the reactor and the water.
- The photo catalytic process only occurs inside the reactor as the •OH has a lifespan of only a few nano-seconds.
- (•OH) is not selective and AOP will not only inactivate and kill living microorganisms, but also decompose resulting matter from dead microorganisms and other organic pollutants in the water.

Oxidant	eV
F ₂	2,87
•OH	2,80
O(1D)	2,43
O ₃	2,07
H ₂ O ₂	1,78
MnO ₄ -	1,67
HOCl	1,48
NH ₂ Cl	1,40
Cl ₂	1,36
HOBr	1,33
O ₂	1,23
Br ₂	1,07
ClO ₂ -	0,95

•OH is, after F₂, the most powerful oxidant in nature.

Enwa Titanium AOP – h2o.titanium technology

- Disinfection by both UV photolysis and hydroxyl radicals (by the means of AOP).
- Kills and decompose all kind of organic substances and pollutants in the water, not only pathogenic microorganisms.
- 99,99% reduction of pathogenic microorganisms.
- No chemicals are added or in use.
- World unique reactor manufactured in a whole block of titanium dioxide (TiO₂)
- Truly catalytic process as the TiO₂ is not sacrificed or consumed. The reactor carries a long lifetime - minimum 25 years.
- Fully automated monitoring and- control system.



Why Enwa Titanium AOP?

Efficient

- ensures non-selective destruction of all organisms quickly and easily

Environmental friendly

- no chemicals added or used,
- no by-products generated and left behind
- low energy consumption.

Cost effective

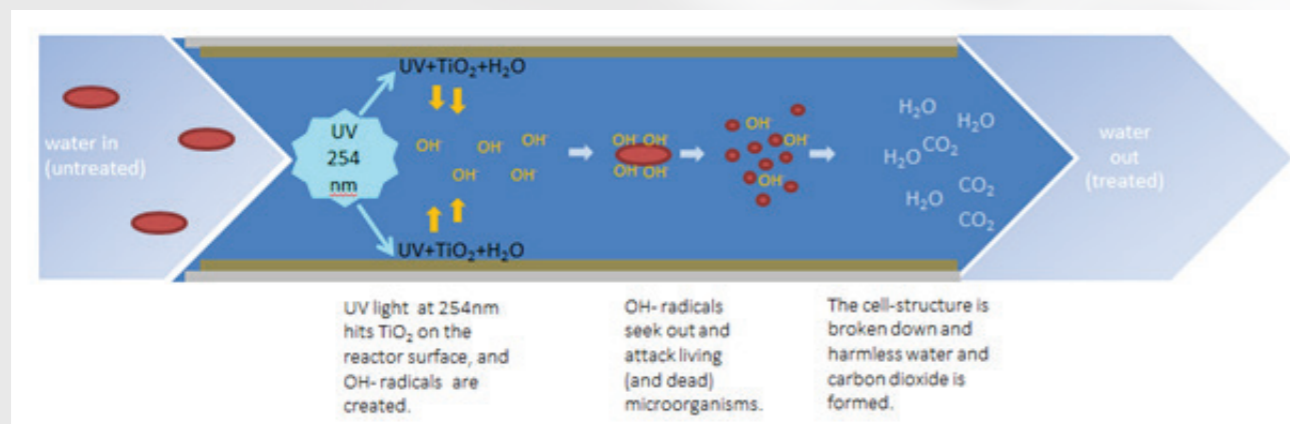
- no expensive chemicals required
- low cost maintenance procedures
- long lifetime

Safe

- fully automated control and monitoring system
- no permanent changes in the water's physical or chemical parameters
- no risk of overdosing

Flexible

- Systems available for flow rates from 0,5 m³/h to over 1000 m³/h
- Offers a water purification process in addition to disinfection system



A schematic figure of the AOP process; As the OH-radicals are non-selective, they will not only attack living organisms, but also eliminate organic residuals from dead microorganisms or other organic pollutants in the water.