enwa

h2o.TITANIUM

Fresh Radicals

Cost-effective and environmentally friendly "gatekeeper solution" for disinfection of consumption, process and drinking water

- Strong disinfectant effect • Environmentally friendly • Low energy consumption Reliable • Flexible capacity (0.5 to 3000 m3 / hour) Chemical-free disinfection

Enwa – No. 1 for chemical free

Clean water without the use of chemicals

Why disinfection:

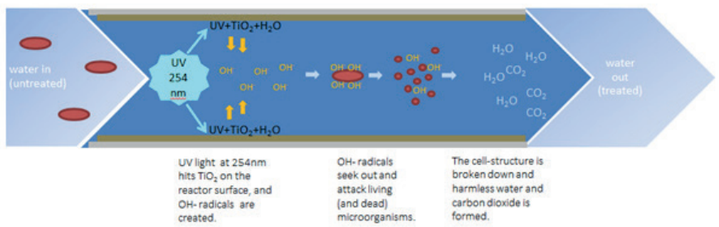
The main goal for the treatment and use of drinking water is to ensure hygienically safe water. Disinfection is the most common way to control the spread of waterborne disease-causing microorganisms
e.g legionella and e-coli.

AOP – Advanced Oxidation Process

- Oxidation of microorganisms and other organic compounds is a powerful disinfection method.
- AOP utilises the strong oxidising ability of the OH radicals (· OH) to inactivate and break down microorganisms and compounds to harmless inorganic substances. The OH radicals have a very high oxidation potential (2,8 eV). Naturally it is just Flourine F2 which has a stronger oxisiding effect
- When OH-radicals come into contact with a micro-organism or an organic molecule, a strong oxidation process will occur such that bacteria, virus and other disease causing organisms are broken quickly and effectively
- Enwa h2o.TITANIUM AOP generates large amounts of ·OH radicals using energy from UV- radiation to start a photo catalytic process between the titanium dioxide surface (TiO2) inside the reactor, and the water.
- The photocatalytic process only occurs inside the reactor as the (·OH) has a lifespan of only a few nano-seconds. the hydroxyl radical is not selective and will not only inactivate and kill live micro-orgnisms it will also decompose resulting matter and other organic pollutants in the water

Oxidant	eV
F2	2,87
•OH	2,80
O(1D)	2,43
O3	2,07
H2O2	1,78
MnO4-	1,67
HOCl	1,48
NH2Cl	1,40
Cl2	1,36
HOBr	1,33
O2	1,23
Br2	1,07
ClO2-	0,95

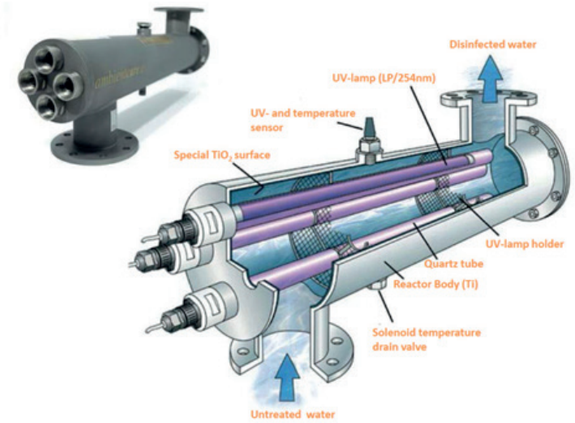
Hydroxyl radical ·OH is, after Flourine (F2) the most powerful oxidant in nature



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.

Enwa h2o.TITANIUM AOP – Advanced Oxidation Process

- 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 (TiO_2)



- Truly catalytic process as the TiO_2 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 m^3/h to over 1000 m^3/h
- Offers a water purification process in addition to disinfection system

Water is one of the worlds most important resources – and will always be crucial to people's lives, welfare and finances

Enwa offers water treatment solutions for industry, construction & real estate. Safe drinking water, clean process water, corrosion protection and energy efficiency in heating and cooling systems are some of the areas where our expertise, products and solutions add value to the customer. We are also a service provider and operate extensive service on all our products.

ADVANCED WATER TECHNOLOGY

enwa

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