



ITT

Water & Wastewater

TOC
Pharmaceutical
Hormones
Hormones
COD
MTBE
NDMA
Pesticides
EDC
1,4 Dioxan
Hormones
TOC
Discolouration
NDMA
Pharmaceutical
Pesticides
1,4 Dioxan
EDC
Pharmaceutical
1,4 Dioxan
Pesticides
MTBE

Advanced Oxidation Process

with WEDECO expertise and technologies

Engineered for life

AOP Advanced Oxidation Process in need of expertise

Industrialization, intensive agriculture and comprehensive medical care, while indeed having positive aspects for human beings, also have negative effects for our water circulation.

Traces of organic contaminants, pesticides, biocides or medicines are frequently to be found in drinking and waste water. If absorbed via drinking water sources or through the food chain, the risks inherent for the health and genetic inheritance of human beings and animals alike are long term. Biological waste water treatment is no longer sufficient to guarantee complete decomposition.

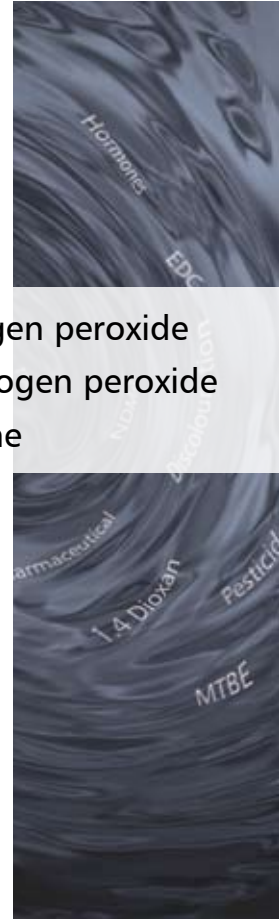
Ozone oxidation and the Advanced Oxidation Process are well-suited to eliminating these pollutants. A potent oxidation agent, ozone alone is selective in the agents it reacts with and, under certain conditions, can form hydroxyl radicals possessing a high reactive capacity.



The task of the Advanced Oxidation Process (AOP) is to trigger the formation of these ·OH radicals. This process eliminates a wide variety of toxic compounds and microscopic pollutants. A number of different procedures are well established for producing hydroxyl radicals:

- ▶ O_3 / H_2O_2 Ozone with hydrogen peroxide
- ▶ UV / H_2O_2 UV light with hydrogen peroxide
- ▶ UV / O_3 UV light with ozone

Ideally, contaminated drinking and waste water (for example, containing NDMA, MTBE, 1,4 dioxane, EDC etc.) should always be treated using the most efficient of the various procedures. This is why the implementation of the AOP procedure in water or waste water works should always begin with the correct selection of the process to be used. But which of the procedures is the best for you to fulfill the task at hand?



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The Advanced Oxidation Process form hydroxyl radicals possessing a high reactive capacity



WEDECO Ozone technology

ITT Water & Wastewater develops, designs and manufactures state-of-the-art WEDECO ozone systems for water treatment and industrial processes with capacities from 2 g/h up to 250 kg/h per unit.

Patented Effizon® HP technology and years of manufacturing experience enable us to deliver unique, highly efficient and cost-effective WEDECO ozone systems. The philosophy behind the Effizon® HP technology is: To achieve highest reliability and performance at the lowest total costs.

Investing with certainty - AOP validation

ITT Water & Wastewater can help you to find the right solution before you make any kind of long-term commitment. As the sole manufacturer of UV and ozone systems, we possess our own lab and research facilities for water treatment, which investigate the specific research requirements of our clients.

Our experts determine the right procedure for your situation on site at your facility using our mobile AOP validation station. This does not only apply to new treatment systems - it can also be used to optimize existing processes. The various procedures can be tested based on your specific parameters in just a short period of time. Practical experience, after all, provides results that are more tangible and more promising than theoretical approaches.

In addition to our analytical expertise, you can also profit from our many years of experience at ITT Water & Wastewater in producing and designing AOP core components. WEDECO UV and ozone technologies provide fully developed treatment systems that have been setting standards in modern water treatment for more than 33 years.



Our experts determine the right procedure for your situation on site at your facility using our mobile AOP validation station

The advantages of AOP validation

- ▶ Assured values for the decomposition of pollutants
- ▶ Local conditions taken into account during the analysis
- ▶ Optimal approach in achieving the treatment goals
- ▶ High level of security for investments in implementation
- ▶ High level of security for results



WEDECO UV technology

From pioneer to international brand - with 13 different reactor types and open-ended configurations, WEDECO UV systems offer a suitable solution for just about every situation.

The core of WEDECO UV systems consists of a specially developed and particularly powerful Spektrotherm® UV low pressure emitter. Special doping techniques and electronic control gears specially designed for this emitter type provide excellent conditions in UV performance and efficiency.



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What can ITT Water & Wastewater do for you?

Integrated solutions for fluid handling are offered by ITT Water & Wastewater as a world leader in transport and treatment of wastewater. We provide a complete range of water, wastewater and drainage pumps, units for primary and secondary biological treatment, products for filtration and disinfection, and related services. ITT Water & Wastewater operates in some 140 countries across the world, with own plants in Europe, China and North and South America. Headquartered in Sweden, ITT Water & Wastewater has 5,800 employees and turnover exceeding \$1.6 billion (2007). The company is wholly owned by the ITT Corporation of White Plains, New York, supplier of advanced technology products and services.

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