



Micropollutants removal from wastewater

Nouryon
MicrOx™
—



A novel solution for pharmaceutical-free water



Micropollutants, such as medicine and hormones, accumulate in our water systems and this is an emerging global issue. Our novel solution efficiently removes pharmaceuticals from wastewater; clean water is then discharged to the environment helping to prevent future antibiotic resistance.

Global issue

As the world population rises the demand for pharmaceutical treatments also increases. Unfortunately, as a consequence, the pollution resulting from discarded pharmaceuticals has increased. These micropollutants mainly reach the environment through the discharge of effluent from municipal wastewater treatment plants.

Governmental focus

The European Commission (EC) has adopted the Water Framework Directive WFD, 2000/60/EC in 2000. The European Union has acknowledged the emerging issues around pharmaceutical-free water and in March 2019 they announced that there will be more focus on a strategic approach to control pharmaceuticals in the environment.

Advanox and MicrOx remove micropollutants!



Wastewater is discharged to the sewers from households, hospitals and industrial users

Traditional wastewater treatment does not remove persistent micropollutants such as pharmaceuticals

Advanox UV-C light and MicrOx hydrogen peroxide react with each other in a reactor removing these pharmaceuticals from the wastewater stream and also preventing the spread of resistant microorganisms

Treated water is discharged into the environment



The mechanism - AOP - where the magic happens!

The Advanox system delivers UV-C light that transforms the MicrOx hydrogen peroxide into hydroxyl radicals.

These radicals are powerful molecules and initiate an Advanced Oxidation Process (AOP). Dependent on the dosage of hydrogen peroxide and UV-C light, this process removes up to and above 90% of the pharmaceutical residue.

The benefits

- Removes pharmaceuticals effectively
- Easy and safe to operate and maintain
- Scalable, flexible and modular design
- Cost competitive
- Eco-friendly - potential surplus of hydrogen peroxide is decomposed into only water and oxygen in a specialized catalytic bed

Reducing antibiotic resistance

The micropollutants; hormones, medicines and other persistent compounds, are quickly degraded. At the same time any bacteria that might have developed antibiotic resistance are eliminated due to the high UV-C light dose delivered in the reactor.

Unique partnership



Nouryon and Van Remmen UV Technology have entered a unique partnership, combining the agility of an entrepreneurial business together with a global specialty chemicals leader and expert in highly demanding chemistry. Our combined application know-how, optimized supply chain and global logistics we create a unique one-stop solution for municipal wastewater treatment plants and our other customers.

We share our profound application experience and product knowledge with our customers to ensure efficient and easy operations. We make sure MicrOx hydrogen peroxide is handled in a safe and user-friendly manner.

Our partnership can ensure true customer focus and deliver a robust, efficient and sustainable technology for pharmaceutical-free water.

We are here to help!

For more information on this exciting solution, contact us at microx@nouryon.com.

We look forward to hearing from you!

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Nouryon

We are a global specialty chemicals leader. Industries worldwide rely on our essential chemistry in the manufacture of everyday products such as paper, plastics, building materials, food, pharmaceuticals, and personal care items. Building on our nearly 400-year history, the dedication of our 10,000 employees, and our shared commitment to business growth, strong financial performance, safety, sustainability, and innovation, we have established a world-class business and built strong partnerships with our customers. We operate in over 80 countries around the world and our portfolio of industry-leading brands includes Eka, Dissolvine, Trigonox, and Berol.