



we clean water

Nanocarbon[®]

BY VTA | WE CLEAN WATER

EVOLUTIONIZING BIO-PHYSICS
REVOLUTIONIZING WASTEWATER TREATMENT



VTA Nanocarbon[®] Video

VTA Nanocarbon[®]



Cutting-edge fluid intelligence technology engineered for the adsorptive elimination of micropollutants.

Introducing the latest advancement in the VTA Liquid Engineering series: **VTA Nanocarbon[®]**. This sophisticated suspension boasts biophysical adsorption properties at the nanoscale, comprising functionalized carbon nanoparticles meticulously combined with specific cationization, bio activators, and essential bulk elements.

In today's world, anthropogenic trace substances or micropollutants are ubiquitous, ranging from synthetic compounds like active pharmaceutical ingredients, cosmetics, pesticides, to industrial chemicals. Even at low concentrations, these substances pose human and ecotoxicological risks. Originating from various sources such as households and industries, they find their way into wastewater treatment plants and eventually permeate the water cycle. Current wastewater treatment technologies struggle to effectively retain or degrade this diverse array of trace substances, leading to pollution in rivers, lakes, groundwater, and drinking water.

Additionally, conventional wastewater treatment processes currently lack adequate measures to effectively address the growing menace of microplastics, particularly the minuscule plastic particles that pose significant health risks.

Thanks to the unique configuration of **VTA Nanocarbon[®]**, which maximizes its active surface area, even small doses within the existing purification system can efficiently remove anthropogenic trace substances, microplastic particles, and AOX in a low-energy manner. Administered directly into the activated sludge of the aeration tank, it ensures thorough mixing and sufficient contact time for optimal performance.

Through the application of VTA Liquid Engineering, this cutting-edge process effectively mitigates fouling and scaling in biological systems, thus maintaining operational efficiency over time.

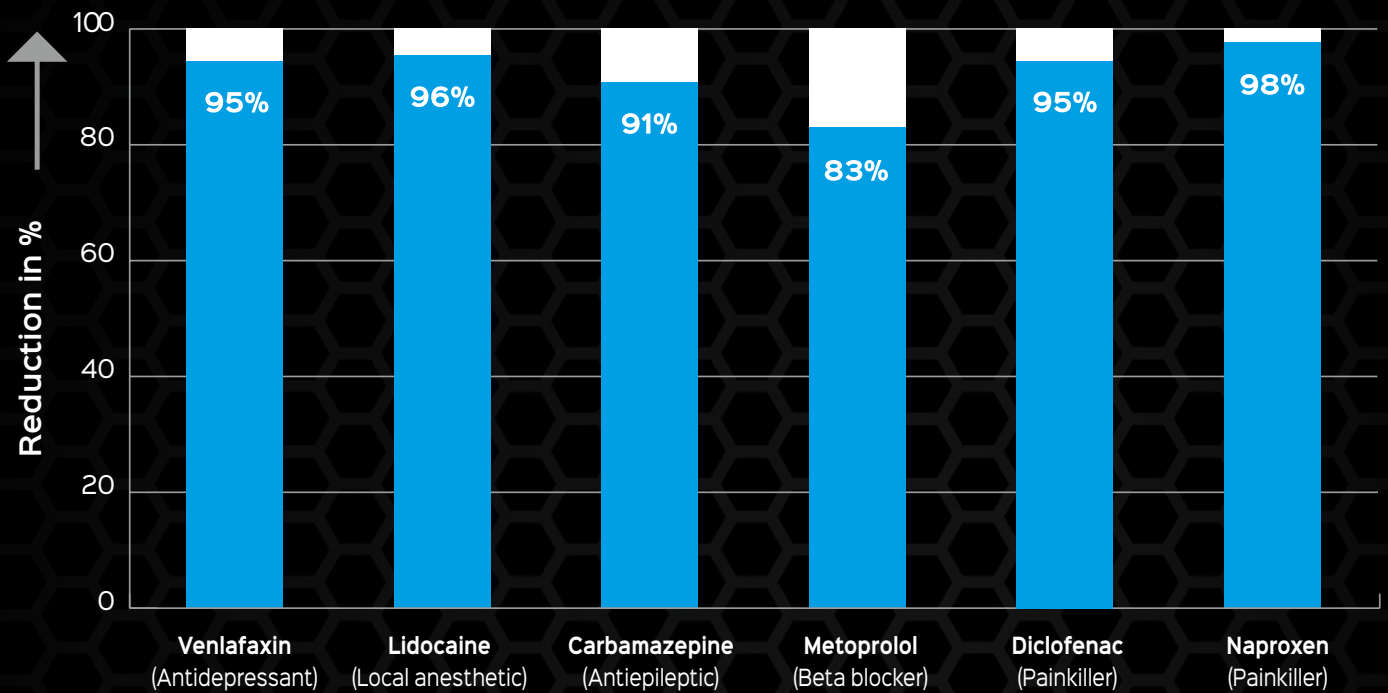
**THE VTA LIQUID ENGINEERING PROCESS
REPLACES THE FOURTH PURIFICATION STEP**

**ELIMINATES UP TO 99% OF ULTRA-FINE
MICROPLASTIC PARTICLES**

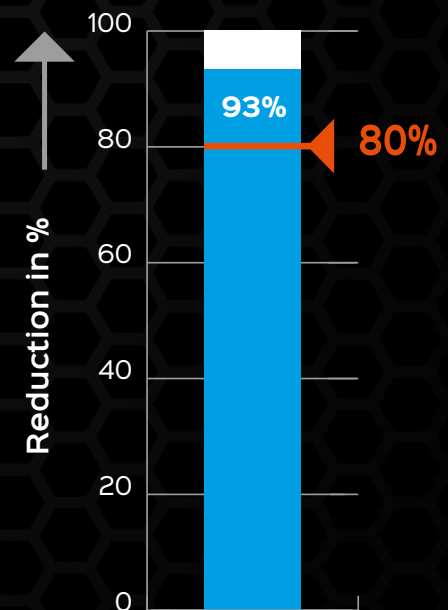
**ELIMINATES UP TO 98% OF
PERTINENT TRACE SUBSTANCES**

VTA Nanocarbon®

The recorded values reflect the average cleaning effectiveness across different types of wastewater treatment plants for various anthropogenic trace substances over a one-year period.



▶ The EU Urban Waste Water Directive mandates an average removal rate of 80%.

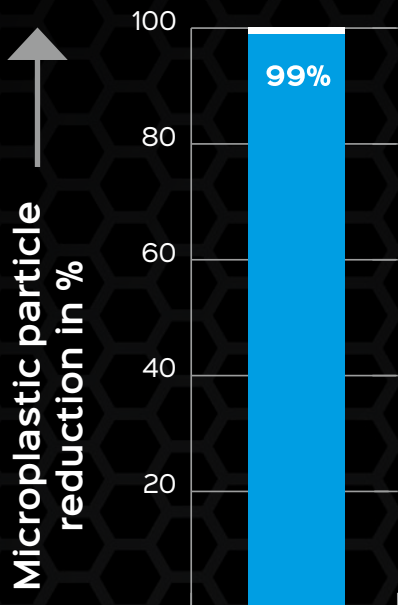


UP TO 30%
CARBON REDUCTION

CLIMATE-RELEVANT

UP TO 30% LESS
VENTILATION ENERGY

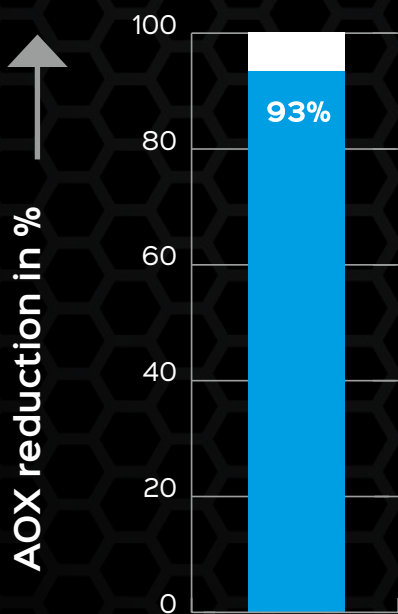
VTA Nanocarbon® removes up to 93% of significant trace substances!



Reduction of microplastic particles through VTA Nanocarbon®

Extensive testing has revealed that **VTA Nanocarbon®** effectively eliminates up to 99% of microplastic particles, especially those in the lower micrometer range. The microplastic analysis is carried out using a high-tech laser-directed infrared spectrometer.

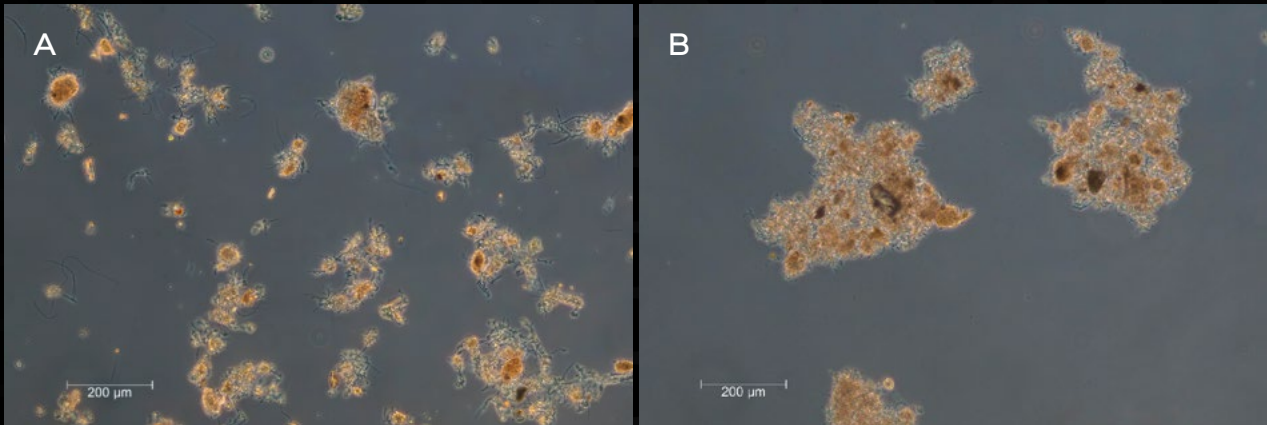
Illustration of the reduction performance of **VTA Nanocarbon®** in relation to microplastic particles.



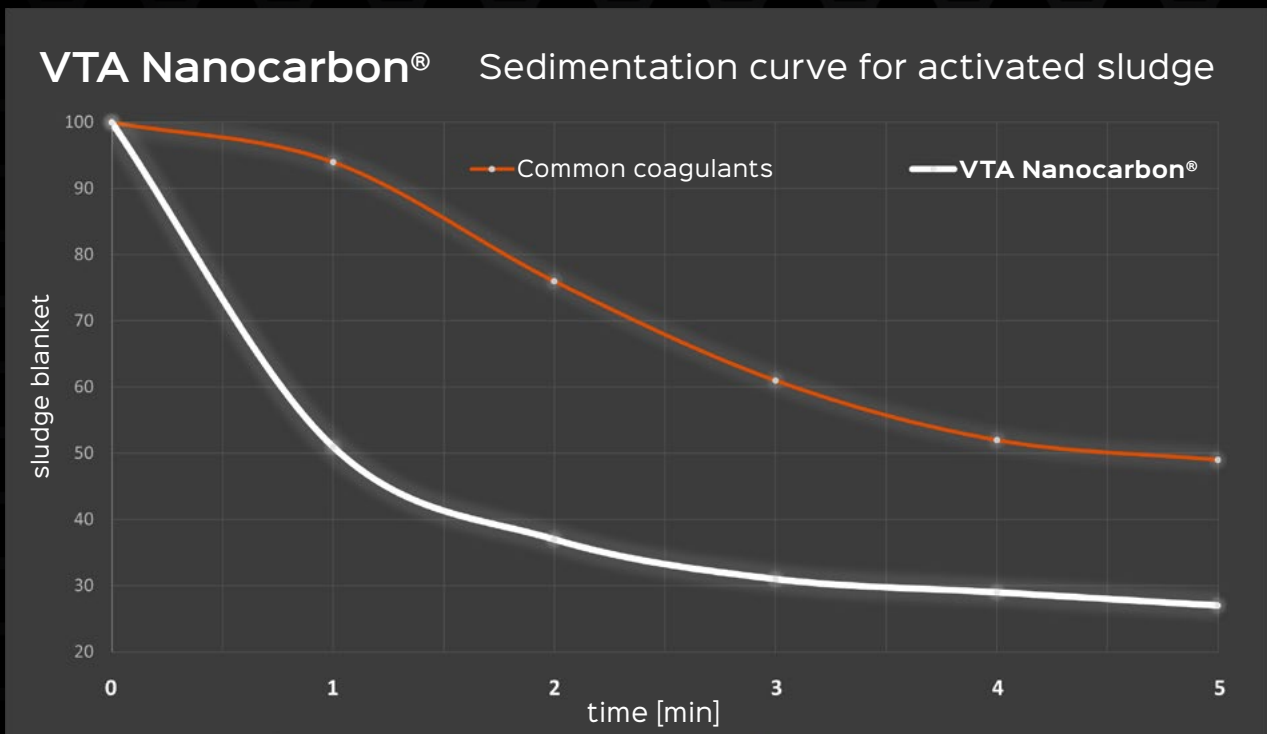
Reduction of AOX levels through VTA Nanocarbon®

By employing **VTA Nanocarbon®**, non-naturally degradable pollutants like AOX can be effectively removed from wastewater by up to 93%.

Illustration demonstrating the reduction of AOX achieved through **VTA Nanocarbon®**.



An illustration showing the floc morphology prior to (A) and during (B) the application of VTA Nanocarbon®, both magnified at 100x.

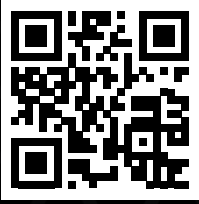


Experience enhanced sludge properties with VTA Nanocarbon®. Our solution promotes an optimal and dense floc structure, maximizing solids' settling speed for unrivaled operational reliability, even under heavy hydraulic loads. Furthermore, it boosts biological activity, ultimately improving the purification performance of your wastewater treatment plant.

The compact floc configuration permits efficient oxygen dispersion, maximizing oxygen utilization. This facilitates a possible decrease in aeration energy usage of up to 30% during the activated sludge phase, playing a pivotal role in advancing energy efficiency and environmental sustainability in wastewater management.



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No hazardous goods

Optimizing Your Carbon Footprint

The use of VTA Nanocarbon® does not result in any transformation products!

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