SÜLZLE KOPF Anlagenbau

AK-DOS®
eliminates micropollutants

AK-DOS® works
reliably and accurately since October 2011

AK-DOS® is safe
ensured by a comprehensive safety concept

AK-DOS® is highly economic
due to accurate PAC dosing at all inflows

WWTP Böblingen-Sindelfingen

Emissions control without compromise

AK-DOS® Storage and Dosing System for Activated Carbon

The elimination of micropollutants in wastewater treatment is becoming more and more significant. In 2015 European policies tightened the limit values for micropollutant input for direst and indirect discharger points dramatically.
Due to increasing consumption of pharmaceuticals, including their improper disposal, thousands of tons of biological active compounds reach the municipal wastewater treatment plants. The elimination of these substances challenges conventional wastewater treatment technology to the extent that pharmaceuticals and their metabolites pass the plants and enter the water cycle through the receiving waters.
To comply with future demands adsorption systems with powder activated carbon are increasingly being used. By adsorbing the micropollutants these substances are safely eliminated, retaining them completely from the water cycle. AK-DOS® is a proven in practice storage and dosing PAC system from SÜLZLE KOPF Anlagenbau designed to comply to tomorrows demands today.

Association of Communes Wastewater Treatment Plant Böblingen-Sindelfingen, expansion with fourth treatment stage

The 4th treatment category is a downstream process reducing micropollutants in conventionally treated wastewaters.
The wastewater treatment plant Böblingen-Sindelfingen, sized for 250.000 Population Equivalents, was equipped with a PAC storage and dosing system and a circular tank which acts as a reaction and sedimentation tank for the added powder activated carbon.
To minimize the costs for activated carbon and to ensure a continuous and reliable reduction resp. elimination of the micropollutants a AK-DOS® system with twin column precision dosing units was installed. The suspended activated carbon enters the reaction tank where it comes in contact with the micropollutants. The substances are adsorbed and drawn from the sedimentation tank, filtered and together with the waste activated sludge incinerated. This treatment reduces the total COD value of the receiving water below 20 mg/l (at 10 g PAC/m³ wastewater).

Technical data of the adsorption step*:

- reaction tank:	1.800 m³
- sedimentation tank:	7.200 m³
- AK-DOS® silo volume:	gross 150 m³
- mixing and aggregation tank:	120 m³
- treated wastewater:	partial current 1.000 l/s

Technical specifications of the AK-DOS® PAC Storage and Dosing System

- footprint:	12,5 m² / ø 3,8 m
- activated carbon:	PAC
- silo volume:	net 125m³
- silo filling capacity:	56,25 t
- dosing unit:	two hybrid scales
- dosing ranges:	scale 1: 7,2 - 72 kg/h scale 2: 3,6 - 36 kg/h
- dose per m³ wastewater:	10 g
- dosage adjustment according to wastewater inlet:	every 2 minutes
- scanning intervals of scales:	every 2 seconds
- control system:	automatically or manually as well as remote controlled

* Flyer Zweckverband Kläranlage Böblingen-Sindelfingen

Comprehensive operational safety features safeguarding maximum availability of the AK-DOS®

- availability greater 99,9 %
- highly reliable operation since October 2011
- in line demand PAC dosing, adapting to changing emission loads
- comprehensive ex-proof safety concept, including detection and extinguishing systems for smouldering fires
- leakage test prior PAC filling, ensuring safe processing
- 100% redundancy of twin columns with automatic switchover within seconds
- compressed air system to ensure dewatering and fluidization of PAC
- comprehensive documentation package, including explosion documents

Highest levels of cost-efficiency of the AK-DOS®

• funding:	> 45 % via ERDF
• delivery & assembly of major AK-DOS® components:	within a day
• extremely low maintenance level:	approx. 4 h/month
• precise dosing:	minimizes PAC consumption
• reduction of delivery costs for PAC:	consumption based dimensioning of silo volume
• compliant to:	EU Directive 2013/39/EC

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