FerroSorp® AW

Filter granulates based on iron hydroxide for further phosphate removal in small waste water treatment plants

The problem

Due to their fertiluizing effects, phosphate compounds found in municipal wastewater promote the growth of algae, and can lead to lake eutrophicaton. Wastewater from properties that are not connected to municipal facilities have to be cleaned at a decentralized facility using mechanical and biological means before the water can be discharged into bodies of water, or before it can be drained and expelled back into the environment.

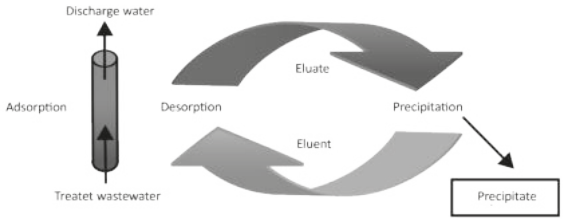
The approval criteria defined by the German Institute of Construction Technology (DIBt) for further phosphorus elimination (cleaning class “+P”) in small water treatment plants is c mg P/l at the water outlet. Currently only very few decentralized small wastewater treatment plants feature additional phosphorus elimination to ensure this concentration in domestic wastewater.

The solution

Our product **FerroSorp® AW** can be used as an efficient, inexpensive solution for further phosphorus elimination in wastewater treatment and can easily be retrofitted. The use of **FerroSorp® AW** not only minimizes the entry of phosphorus into water bodies but also provides the possibility to recycle the phosphorus for agricultural purposes and thus close the natural phosphorus cycle.

The method

Dissolved phosphate ions in mechanically and biologically pretreated waste water are first adsorbed to the surface of **FerroSorp® AW** and are thus eliminated from the water. High adsorption capacity can be maintained by a subsequent chemical regeneration of the filter granules. At the same time adsorbed phosphorus is recycled and can be used as fertilizer or secondary raw material for the fertilizer industry..



Process principle of further phosphorus removal from municipal wastewater in combination with phosphorus recovery

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Overview

With the product **FerroSorp® AW** phosphorus can be completely removed from the water outlet of small water treatment plants and thereby eliminate the water hazard it represents. Additionally phosphate can be recycled and made available for agricultural purposes. The application of FerroSorp® AW presents the opportunity to conserve resources and protect the environment.

The phosphorus adsorption capacity of **FerroSorp® AW** depends on the wastewater parameters and the basic conditions of the specific treatment plant. For each specific technological design the optimal operating conditions are derived after determining the procedural technical conditions.

Examples of application

One particular advantage of the method suggested is that, regardless of the applied technology in the small water treatment plant (SBR-plant, activated sludge treatment, fixed bed system, MBR-plant, sprinkle filter plant, etc.) phosphate can be eliminated from the biologically treated water.

Current data shows that **FerroSorp®AW** can be used advantageously in the following applications:

further phosphate elimination

- In the outlet of small wastewater treatment plants
- Wastewater treatment plants at gas stations and at road houses
- Aquaristics, swimming and garden ponds
- Rain water run-off from streets

Advantages at a glance

- High cleaning performance at low cost
- Easily retrofittable solution for further phosphorus elimination
- No additional chemicals added directly into wastewater
- No additional sludge production
- Possibility to regenerate the filter granulate to maintain adsorption capacity
- Possibility to recover phosphorus and subsequent use as secondary raw material for the production of fertilizers
- Easy and cost-effective disposal of spent adsorbent

We gladly advise you individually!

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