

Closed-type water recycling system

- A water recycling system allowing effluent treatment and reusable circulating water production simultaneously.

Characteristics

- This system can treat organic wastewater by using activated carbon as an adsorbent.
- Since the system can regenerate the activated carbon on site without removing it from the absorption tower, users do not need to bear the cost for purchasing, disposing of and replacing the activated carbon.
- Since the system recycles wastewater and recirculates it, users do not need to pay water and sewage bills, which can reduce costs.



[Effluent purification system (medium size)]
(treatment capacity: 10 t/day)



[Small mobile water purification system]
(treatment capacity: 5 m³/day)

Overview (technological principle, mechanism, etc.)

Our effluent purification system can automatically and repeatedly purify effluent using activated carbon and regenerate the activated carbon on site without removing it from the system (no need for replacement).

In this system, when organic effluent from food manufacturing plants, etc. passes through the activated carbon column modules, organic matter in the effluent is filtered and purified by the adsorption action of activated carbon. These multistep modules are connected in series. Increasing the number of modules can improve the water quality; this system can produce clean water (that meets drinking water criteria) by filtration purification treatment.

Next, superheated steam at a temperature of 300 to 400°C is sent to the activated carbon that has been saturated by treating effluent to desorb the absorbed organic matters covering the activated carbon surfaces. Then the desorbed organic matter is discharged from the system as exhaust gas. As a result, the activated carbon recovers its function and is as good as new.

No polluted mud such as sludge is generated in this method. Also, since there is no need to remove the activated carbon from the system, there is little weight loss in the activated carbon when it is regenerated. This system purifies effluent from facilities/plants using adsorption towers containing activated carbon.

Delivery record

1. Toyoda Gosei Co., Ltd. (Research Department)
① Small system for research ② Delivered and installed in November 2008
2. Toyo Co., Ltd.; as an effluent treatment system for their Nara Plant located at Oyodo-cho in Nara Prefecture
① Treatment capacity: 10 t/day ② Delivered and installed in April 2009
3. Kinken Build Maintenance Co., Ltd.
① Vehicle-mountable stripper effluent treatment system ② Delivered and installed in March 2011
4. TOTO Ltd.
① Small household test system ② Delivered and installed in November 2011
5. Tokai Rubber Industries, Ltd.
① Deodorization system ② Delivered and installed in March 2013



Effect

- Repeated use of reusable water virtually eliminates the costs for water and sewage, reducing the running costs. (This is perfect in situations where a large quantity of water is used.)
- When purifying organic effluent, organic matter is pyrolyzed and thus virtually no waste is generated.
- Since activated carbon can be regenerated repeatedly and thus there is no need to dispose of saturated activated carbon adsorbents, no costs are required for replacement, transportation or waste disposal.
- Since the footprint of the system is small (less than one-tenth the usual area), the extra space can be used effectively. It can be used also as an aftertreatment system for existing equipment. (Only a few activated carbon towers are required.)
- This system can be also used to supply recycled wastewater. (It can purify household wastewater from detached and collective housing so that the wastewater can be used for toilet flushing and car wash.)

J Top Co., Ltd.

<http://www.jtops.com>

E-mail info@jtops.com

Address: 4-5-44 Migata-cho, Izumi-shi, Osaka 594-0042

TEL +81(0)725-51-3860 FAX +81(0)725-51-3861