

Treatment of high-concentration wastewater discharged from chemical plants.

Catalytic Wet Oxidation Wastewater Treatment

Features

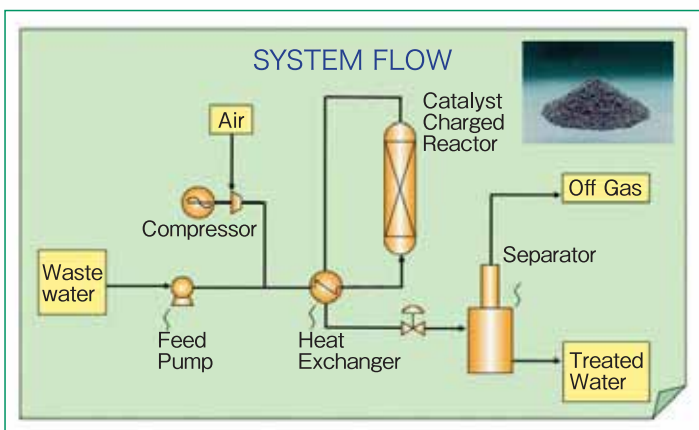
- Decompose chemical substances that cannot be biodegraded with ease, thus achieving the desired environmental regulation level.
- The running cost is remarkably low, i.e., several percent of the incineration treatment cost or less than half the biodegrading treatment cost.
- Environment-friendly wastewater treatment technology with low CO₂ emissions without generating secondary waste.

Overview

(Technical principles, actions, etc.)

Catalytic wet oxidation wastewater treatment is a system that introduces air into wastewater with a high chemical oxygen demand (COD), accelerates highly efficient oxidation using a high-performance solid catalyst, and accomplishes the highly advanced purification of the wastewater. This high-performance solid catalyst, which was developed by Nippon Shokubai, is highly active and has a long life.

The temperature of the wastewater will rise in a reactor used for the treatment when the oxidative decomposition of the COD components in the wastewater makes progress. With the heat exchange between the wastewater and treated water, there is no need to supply heat from an outside source, which allows the thermal independent operation of the system. Therefore, this system makes it possible to purify wastewater by only feeding the wastewater and air, thus resulting in a great reduction in running cost.



System flow



Appearance of system for ethylene plant

Introductory Track Record

- A number of systems have been delivered in China, Taiwan, Indonesia, and Saudi Arabia.

Effects

Comparison with Biodegradation

- Highly efficiently decompose and eliminate toxic chemical substances, which is difficult in conventional methods.
- With the introduction of the system as a pretreatment process before the biodegradation of wastewater, the wastewater can be changed with a great reduction of the COD load into drainage that can be easily decomposed, which will stabilize the biodegradation stage and constantly clear the desired environmental regulation level.
- Generates no secondary waste, such as waste sludge.
- Compact plant design requires smaller site.

Comparison with Incineration Treatment

- No fuel for incineration is required, which results in a great reduction in running cost.
- No secondary pollutants, such as NO_x and SO_x, are discharged, and CO₂ emissions can be greatly reduced as well.

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