

Mercury separation Two-phase process



98% of the mercury introduced is removed

The Mercury Ion process consists of the pre-filtration and mercury ion exchange columns. Depending on the amount of scrubber wastewater, the size of the components used varies.

Mercury separation from scrubber wastewater

With the AIK mercury ion process, the mercury (Hg) present in ionic form is very efficiently separated from the scrubber wastewater and recycled, or irreversibly removed from the material cycle. Approximately 98% of the mercury entering the incinerator is removed by the AIK mercury ion process. The remaining 2% of the mercury enters the grate slag, filter ash and exhaust air.

Prefiltration

In the candle filter, suspended solids are separated from the scrubber wastewater by means of total filtration. This prevents the solids contained from contaminating the downstream mercury ion exchanger (Hg-IT). In this way, higher loading capacities and longer service lives can be achieved with the selective ion exchange resin. The cartridge filter is automatically controlled and the discharge is adapted to the process parameters. The discharge or filter cake is blown off with compressed air. This

filtration system thus requires very little maintenance.

Ion exchanger columns

The ion exchange plant consists mainly of two or three columns connected in series. These are filled with a selective mercury ion exchange resin. The H⁺ ions in the resin are displaced by the mercury ions (Hg²⁺). Thus, the mercury ions become deposited in the resin. The time of resin exchange is determined by periodic sampling. The loaded resin can be sent for mercury recovery or recycling. The system can be adapted to the plant-specific needs and requirements so that the respective required wastewater values can be met.

Characteristics

Example: Waste incineration plant

- Separation efficiency > 1:1000
- Residual Hg content after IT < 10 µg/l
- loading density resin ~ 55 g Hg/kg Resin
- Ø resin consumption ~ 0.03 kg/t Waste

Carefree with annual contracts

Some of AIK Technik's customers chose the option of annual contract. This solution allows you to optimize budgeting, as the cost of mercury removal is fixed per ton of waste incinerated.

AIK Technik AG organizes the resin deliveries, the removal and the recycling of the loaded resin. Talk to us if you want a precisely calculable and worryfree mercury separation operation.

AIK Technik AG is your partner when it comes to implementing demanding requirements. With our knowledge and experience we can offer you a sustainable solution for your challenge. We are at your disposal for your specific inquiries.

Please contact our specialists.

