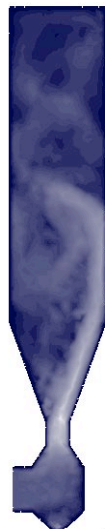


TECHNICAL BULLETIN



EcoSorb™ Circulating Fluid Bed System

For

***Acid Gas Removal
and
Humidification***

***Technical Bulletin No.
CFB-60715 v4***

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DESCRIPTION OF THE SYSTEM

A Circulating Fluid Bed Scrubber (CFB) is a cost-effective way to reduce emissions of acid gases such as SO₂, SO₃, HCl, HF, and other noxious gases produced during the process of combustion. It is available in various configurations to fit most any process, and it can be designed to work with a variety of materials, including calcium and sodium based sorbents. It can also be used to reduce heavy metals, such as mercury, by injecting activated carbon along with the acid gas sorbent.

The EcoSorb CFB Reactor is an effective, efficient and inexpensive way to solve the problems of emissions from boilers, refuse derived incinerators, brick kilns and other processes requiring an efficient gas cleaning technique. The process uses a circulating bed or powdered sorbent material to neutralize acid gases and other pollutants in the gas stream.

Hot flue gas leaves the process and is cooled with water, injected co-current with the gas with single or dual-fluid spray nozzles in an upflow reactor, just below the fluid bed. While in the reactor, the quenched gases come into contact with a fluid bed of recirculating sorbent used to neutralize the pollutants in the gas stream.

The injected sorbent material protects the ductwork and the dust collector from acid gas corrosion, and begins to remove the acid gases (mainly HCl, HF and SO₂) from the gas stream while in the reactor. A close-coupled dust collector, typically a fabric filter or an Electrostatic Precipitator, serves as the final particulate collection device as well as a secondary reactor improving the overall acid gas collection efficiency. The material collected from the dust collector is recirculated to the CFB Reactor where it is re-utilized and recycled 100 times before being discarded as spent waste material.

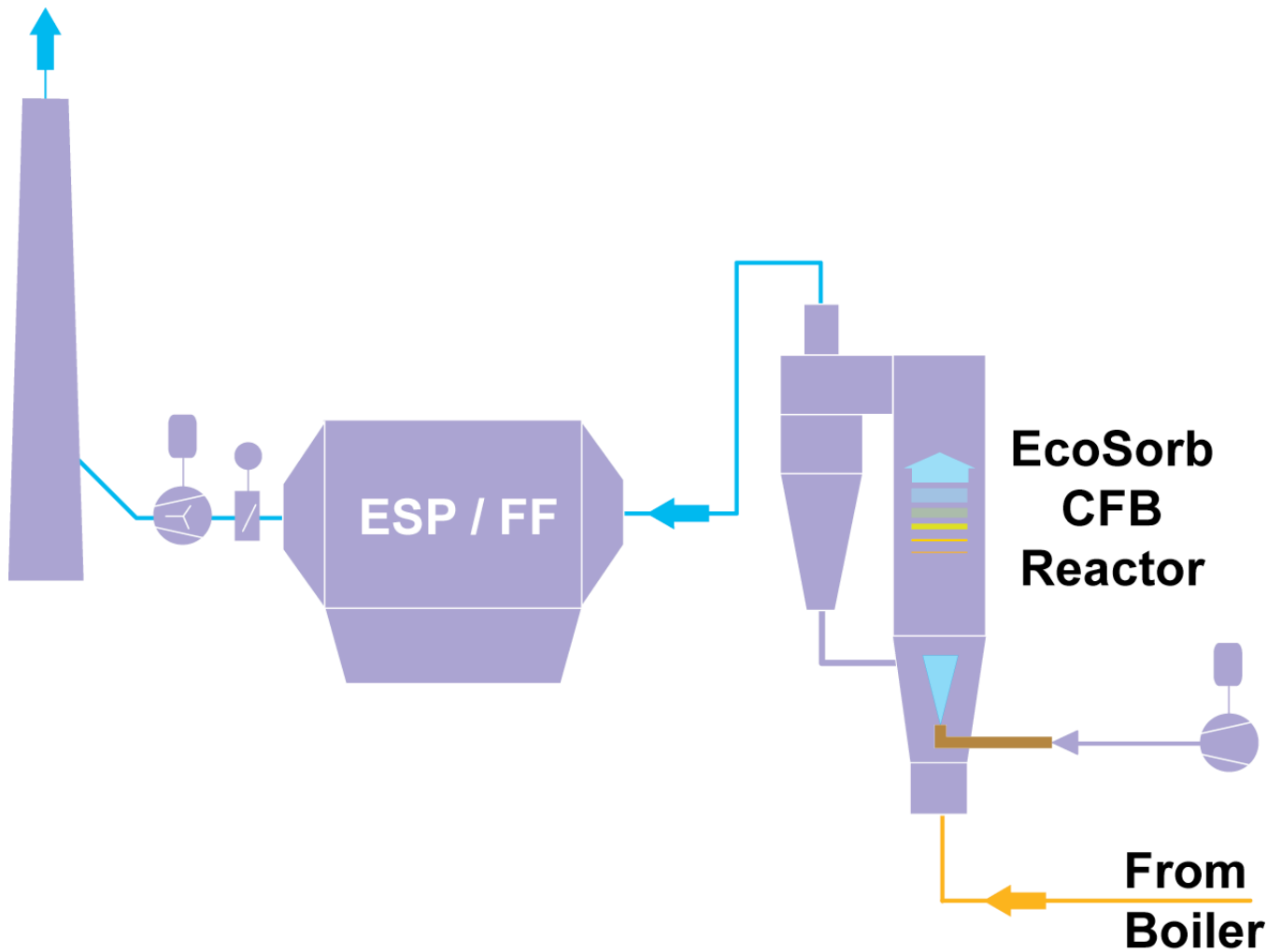
In retrofit applications, a close-coupled cyclone is installed between the CFB Reactor and the dust collector to collect the material to be recycled and acts as an intermediate acid gas polishing device. Just as in the close-coupled dust collector design, the reagent sorbent material is recycled 100 times before going to waste.

The exit gases and particulate are drawn through the dust collector by the Induced Draft Fan, which creates the draft required to evacuate the entire system. Some of the gases from the outlet of the fan can be recycled back to the reactor inlet in order to maintain a given range of throat velocities, which allows precise control of the acid gases at all gas flow rates.

From the fan, the gases exhaust through the stack to atmosphere.

TYPICAL EFFICIENCIES

A Circulating Fluid Bed Reactor is capable of removal efficiencies from 75-95%, depending on the sorbent used, the gas temperature, the approach temperature (outlet gas temperature), the inlet acid gas concentration, and the acid gas composition.



**Typical EcoSorb CFB Reactor Process Flow
Retrofit Application**