



WETCLEAN | Wet scrubber pollutant neutralization and oxidation

Wet Scrubbers for industrial applications

What are Wet Scrubbers

The wet scrubber WETCLEAN is a technology used for the removal of pollutants from gaseous streams. It is used for the abatement of dusts, VOCs (Volatile organic compound) and VICs (Volatile Inorganic Compounds).

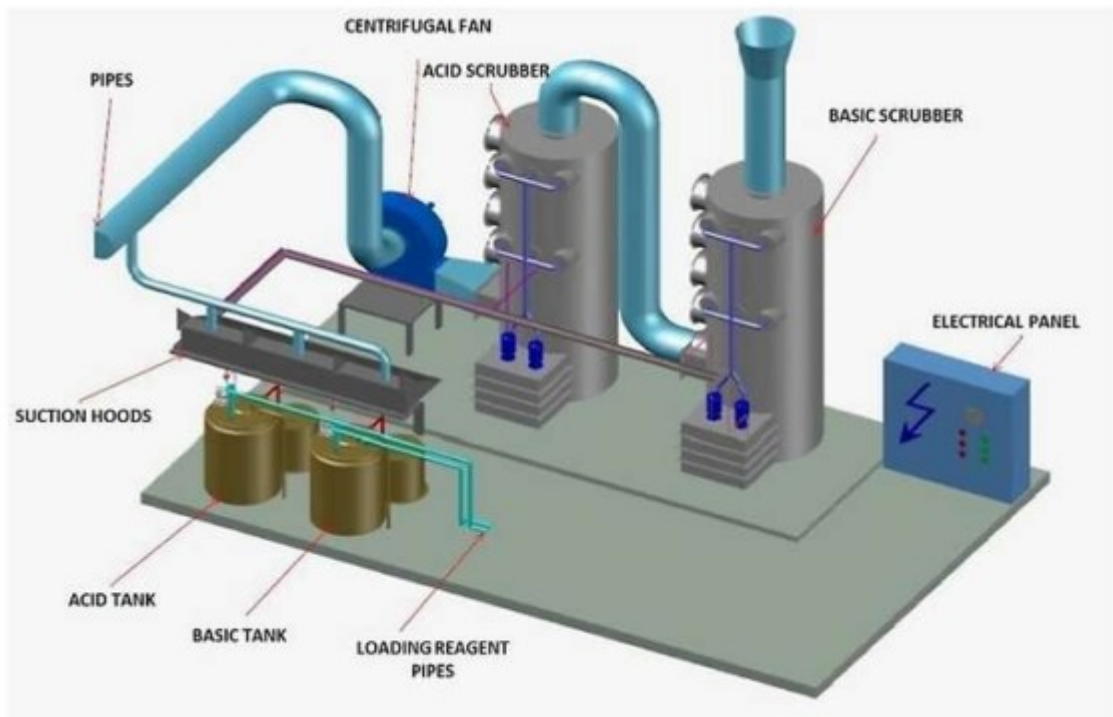
Gallery

Wet scrubber: removal mechanism

Wet scrubbers are “showers” where the polluted effluent is washed from the recirculating liquid in order to absorb the pollutants.

At the bottom of the scrubber there is a tank with the solution used for this process that is characterized by a specific pH that determine its acidity or basicity. The aqueous solution used inside scrubbers will have a pH suitable to abate the pollutants. The basic VIC are reduced thanks to an acid reagent, while the acid VIC are reduced through the use of a basic reagent. To guarantee the abatement efficiency, the solution contained into the tank under the scrubber is linked to reagent tank. In this way, a special pump transfers the reagent directly inside the tank in order to compensate the pH values.

The following image could be used to better understand the working principle of the scrubber:



As you can see, the polluted air due to the production process is aspirated through a pipe, it flows inside the fan and then is treated inside the two scrubbers.

The process in the picture is a two-stage abatement system where the air enters inside the first scrubber, where take place the reduction of basic compound like ammonia, to than flows in the second tower designed to remove the acid compound like hydrogen sulfide.

Both scrubbers are equipped by tanks connected to reagent tanks where are stored the acid or basic reagents use to stabilize the pH. The plant can be equipped also with oxidant reagent in order to reduce the bacterial load before the emission.

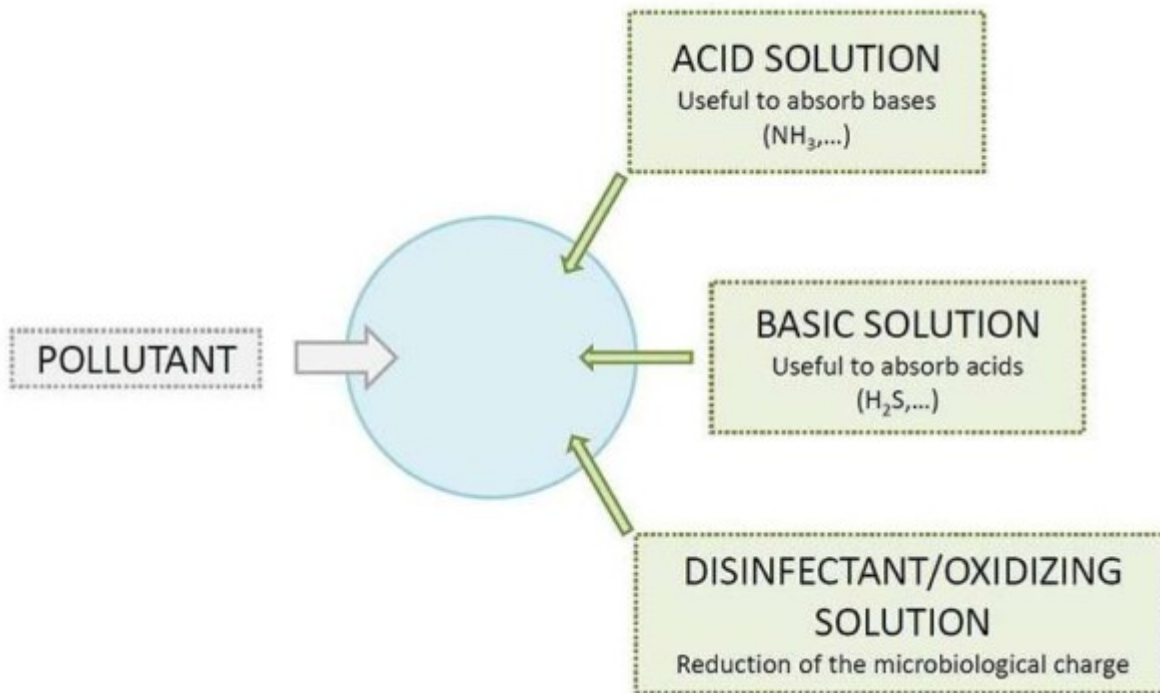
Wet scrubber: parameters

The main parameters that regulate the particulate capture process are:

- Particles size: the more particle is large, the easier is his capture;
- Droplets size: capture efficiency increases with the decreasing of droplets size;

Relative velocity between the particles and the droplets: the increase of the speed increase the removal efficiency.

Types of wet scrubbers



A possible classification of the types of wet scrubbers is carried out on the basis of the phase to which energy is supplied. Particularly, energy may be supplied to:

- the gaseous phase: this is the case of Wetclean Venturi scrubbers or of plate columns
- the liquid phase: this is the case of spray towers
- both liquid and gaseous phases: is the case of packed or floating bed scrubbers

The most important systems are packed columns. They consist of cylindrical chambers, that are internally filled with a packed bed structure. Equipments like this may be used also with countercurrent spray systems.

The optimal definition of the WETCLEAN scrubber (typology, sizing, final efficiency estimation) for the specific application is realized in an analytical way alongside our experience and the experimental tests carried out.

Wet scrubber: maintenance service

Tecnosida® is a perfect partner for planning and execution of ordinary and extraordinary maintenance services required to:

- Verify scrubber's proper functioning
- Keep high filtration efficiency
- Reduce economic and energetic wastes
- Comply with safety and environmental rules and regulations

Contact us for more information

Wet scrubber: remote management systems

Wet scrubber can be equipped with remote management systems for performance monitoring