Harmfulness Gas Remove System

WET SCRUBBER





Dust Collection Principle

Usually, a wet scrubber is used to process harmful gas and chemicals. The harmful gases are cleaned through mist, liquid film and bubble and stuck to the particle.
By accelerating cohesion between the particles, it is a device that separates directly particles from flow of gas.
It is used for the pile up of soluble gas (NH3, HCl, H2S etc.) and one must be careful of the selection of material according to the temperature conditions.
According to the pile up efficiency, a detailed design of the internal packed layers is required. Furthermore, the scrubber is also used diversely for the removal of distillation, humidification, dust and mist.

Characteristics

· The pile up efficiency of minute dusts is high and secondary dust processing is not needed.

· High temperature and high pressure gas handling possible. (Reduces danger of gas explosion)

· Simultaneous processing of dust and gas (especially moist gas) possible

· Installation cost is cheap (When waste water treatment not installed) and installation space is small.

· Corrosive gas. Mist return possible.

· Leads to plugging of bed and plates.

Pile Up Principle

· Attached by the particle colliding with the mist.

· Gathering of particles due to particulate expansion.

· Gathering of particles due to humidification of exhaust gas.

· Accelerates congelation and cohesion of steam with the particle.

· Attached with the particle contacting the liquid film and bubble.

· Solidification problem during dry interface with waste water treatment.

· Pressure loss and power is high and corrosion and sinking of device possible.

※ Although the water used is usually water, surface-active agent is used sometimes. Ultimately, in order to prevent mist scattering to surroundings, it is good to install a demistor.

Type

Running Type

Filling a certain amount of water within the dust collection machine, it is a method of inflowing the processing gas and cleaning the harmful gas. Since the reserves are circulated, it has small supplements. The pressure loss is 120~200mmH20 and pile up particle is appropriate for particle of 1~100um.

Pressurized Water Type

It is a method of cleaning harmful gas by pressurizing and supplying water.

- Venturi Scrubber

Due to the highest dust collection efficiency, it is used widely. The process gas speed of the throat part is usually about 60~90m/sec and pressure loss is 300~800mmH20.
Although the used quantity is different according to the particle diameter hydrophile property of dust, usually in a big particle of 10um or more, particulate or hydrophile o 0.3l/m cubed and 10um or less is needed. In the case of small dusts, about 1.5l/m cubed is needed.

- Jet Scrubber

The dust collection efficiency is high as the dust particle and water drop is good. As a form of ejector, it absorbs gas through pressured water's high pressure atoms and piles up water drops in the dust at the throat part. It does not use a blower. However, since maintenance costs are high due to a lot of water capacity (10l/m cubed), it is not used when there is a lot of processing gas.

- Cyclone Scrubber

The inlet line of the tower is connected through the cylinder side and makes the gas rotate according to the side. The dust is cleaned by atomizing pressurized water everywhere from the center. To add, as the running type dust is simultaneously passed in the part of failing out from the interior to the exterior, the efficiency is very high.

- Packing Tower

Although it is different according to type, packing material, thickness of packing layer and processing gas speed, the pressure loss is about 100~250mmH20 and used quantity is 2~3/m cubed. As a packing material, a light material of 1~1/2 inch must be used and by inserting a smooth surface in the packing layer, it is cleaned by making the contact area between the exhaust gas and contact area big.

Applied Area

Harmful gas occurrence business such as chemical factories / factories related to PCB semi-conductors such as PCB manufacturing factory / bad smell occurrence business such as waste water treatment, human waste disposal plant / fume occurrence business such as plating factories