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Delivering
Cleaner Air

Wet Scrubber

Effective Gas Absorption and Particle Capture for Cleaner Industrial Air



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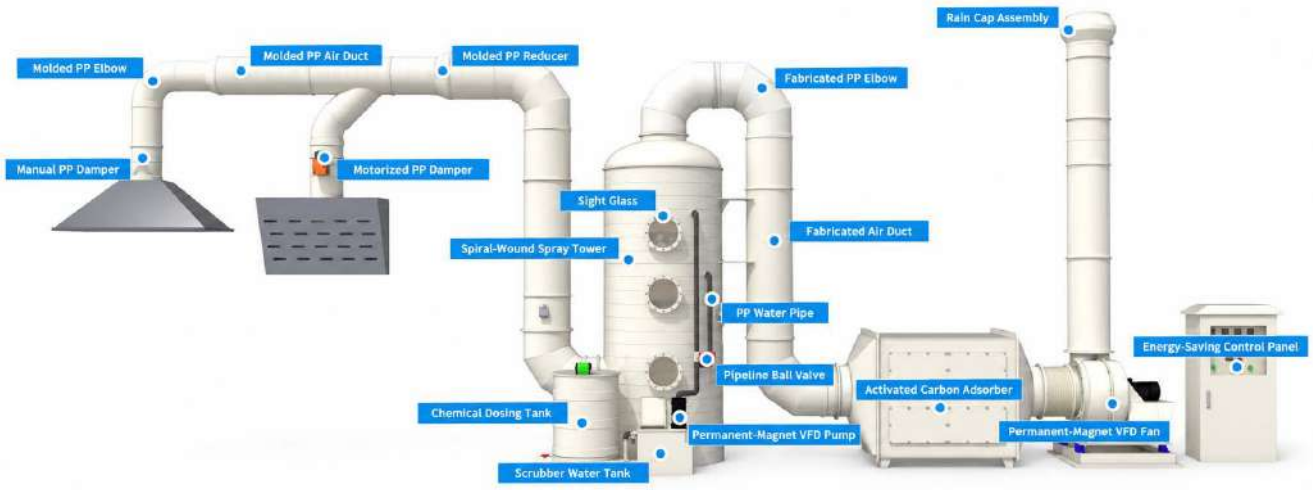
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Wet Scrubber

A wet scrubber contacts exhaust gas with water or chemical solutions to remove pollutants through absorption, chemical reactions, and particle capture. As a primary treatment unit or part of a multistage system, it provides industrial exhaust treatment, wet dust collection, and odor control. Applications include chemical processing, metal finishing, wastewater and waste treatment, power generation, and incineration, targeting acid gases, ammonia, hydrogen sulfide, and particulates.

Select the scrubber type, scrubbing medium, and capacity based on gas composition, pollutant concentration, temperature, and emission requirements. Typical choices include alkaline solutions for acid gases, acidic solutions for ammonia, and suitable chemical scrubbing processes for odorous compounds such as hydrogen sulfide.



▲ Schematic Diagram of the Assembled Equipment and Piping Fittings

WET SCRUBBER

Packed Bed Wet Scrubber

A packed bed wet scrubber uses packing to increase gas–liquid contact area. Exhaust gas contacts recirculating spray liquid on the packing surface, transferring pollutants into the liquid through dissolution, absorption, or chemical reaction. Water, acidic or alkaline solutions, or specialized scrubbing liquids are selected according to pollutant properties.

It treats HCl, HF, SO_2, NH_3, H_2S, acidic and alkaline exhaust gases, and certain water-soluble or reactive gases. Applications include chemical processing, electroplating, pickling, electronics, wastewater treatment, laboratory exhaust ventilation, and other industrial exhaust treatment systems.



Features

Large gas–liquid contact area.

The packing layer provides a large wetted surface area for the absorption liquid.

Suitable for a variety of absorbable gases.

Different types of pollutants can be treated by selecting different scrubbing liquids.

Multiple system configurations available.

The packing layer provides a large wetted surface area for the absorption liquid.

Multiple corrosion-resistant materials available.

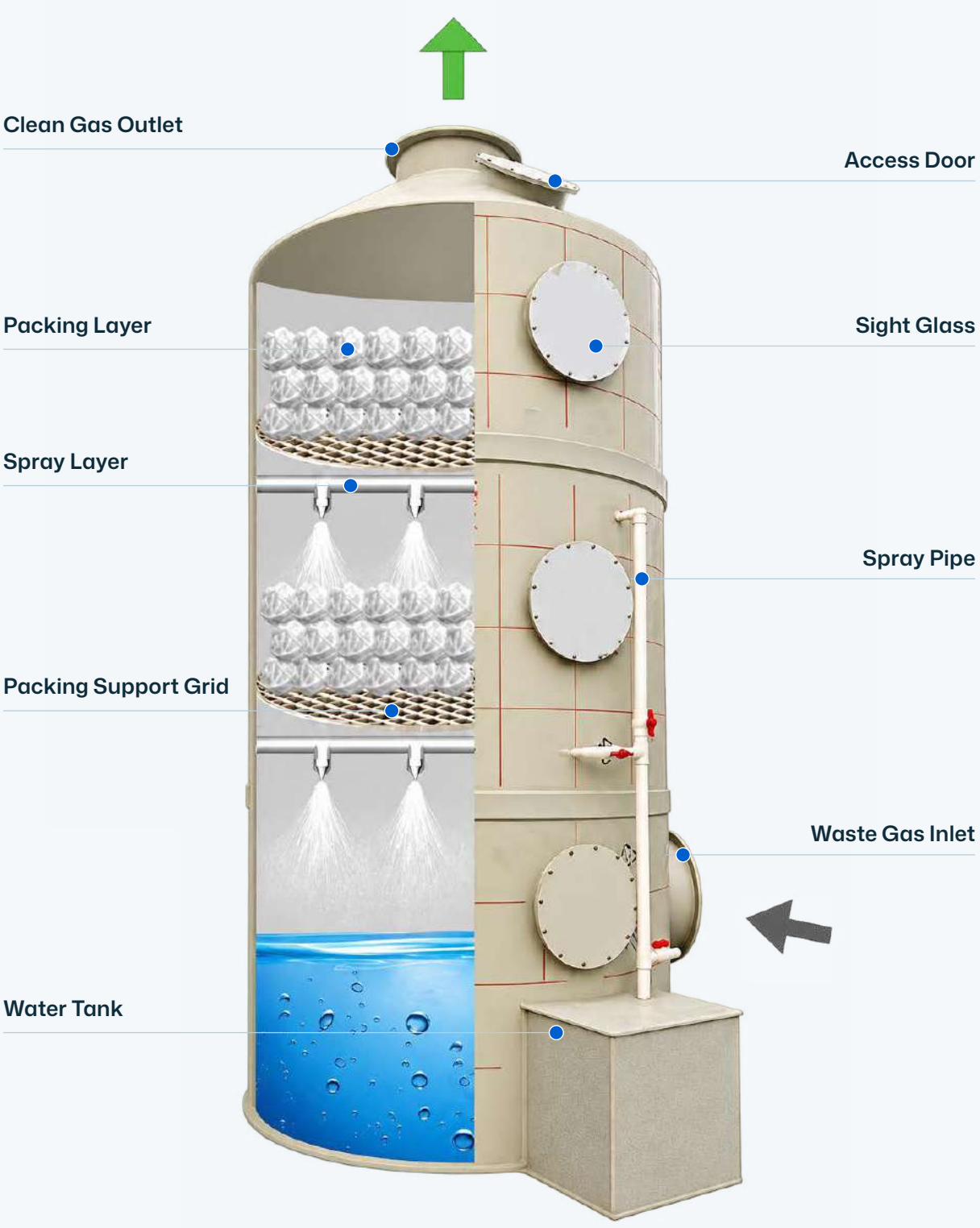
PP, FRP, and other materials are available.

Strong process adaptability.

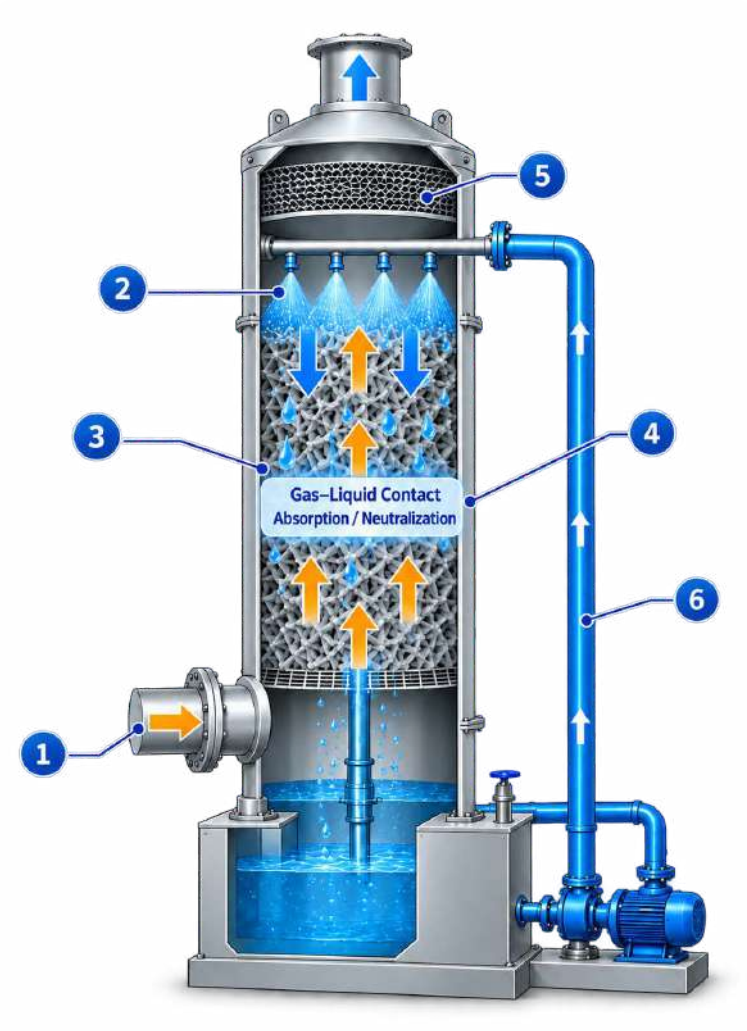
System parameters such as tower diameter, packing height, and spray flow rate can be adjusted according to actual conditions.

Structure

The packed bed wet scrubber mainly consists of the following components:



Principle



01

Waste Gas Intake

Waste gas enters through the lower inlet and rises through the packing bed for treatment.

02

Liquid Spraying

Scrubbing liquid is distributed through the upper nozzles and sprayed evenly over the packing.

03

Gas–Liquid Contact

As gas rises through the packing, it contacts a thin liquid film flowing in the opposite direction.

04

Pollutant Removal

Pollutants are absorbed into the liquid and may be neutralized by suitable scrubbing chemicals.

05

Mist Removal and Discharge

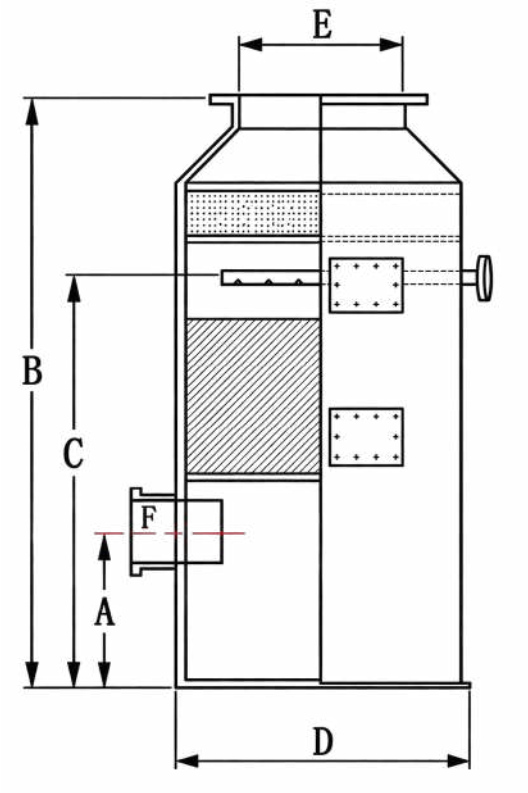
The mist eliminator removes entrained droplets before the treated gas leaves through the top outlet.

06

Liquid Recirculation

The liquid returns to the tank and is pumped back to the spray nozzles for continuous circulation.

Specifications



Standard Configuration

- Spray System
- Packing
- Mist Eliminator
- Inspection Window, Maintenance Manhole
- Overflow, Drain, and Automatic Makeup Ports

Optional Equipment

- pH Control System
- ORP Control System
- Chemical Storage Tank
- Chemical Level Control System
- Recirculation Tank Water Level Control System
- Pressure Gauge

Model	Airflow Capacity (m^3/min)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Circulating Water Flow Rate (L/min)
JPS-10	10	780	3590	2910	300	150	150	30
JPS-20	25	805	3690	2960	450	200	200	40
JPS-30	45	860	3915	3060	600	300	300	70
JPS-40	70	925	3965	3185	750	350	350	110
JPS-50	100	925	4015	3085	900	450	450	150
JPS-60	110	1125	4135	3155	1000	450	450	190
JPS-70	170	1175	4285	3255	1200	550	550	270
JPS-80	230	1225	4435	3355	1400	650	650	370
JPS-90	300	1275	4585	3455	1600	750	750	490
JPS-200	380	1100	4350	3125	1800	800	1300 × 400	600
JPS-300	470	1125	4430	3175	2000	900	1450 × 450	680
JPS-400	570	1125	4505	3175	2200	950	1600 × 450	770

Model	Airflow Capacity (m^3/min)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Circulating Water Flow Rate (L/min)
JPS-500	680	1125	4555	3175	2400	1050	2400 × 450	922
JPS-600	800	1200	4755	3325	2600	1150	2000 × 600	1100
JPS-700	920	1200	4805	3325	2800	1250	2200 × 600	1260
JPS-800	1130	1200	4965	3345	3100	1350	2400 × 600	1540

Note: For reference only. Special designs are available for sizes above Ø3100 upon request.

Project









WET SCRUBBER

Horizontal Wet Scrubber



A horizontal wet scrubber directs industrial exhaust gas horizontally through a spray section, packing or other gas–liquid contact zones, and a mist eliminator. Pollutants transfer to the liquid through dissolution, absorption, or chemical reaction.

Lower in height than conventional vertical scrubbers, it can be installed horizontally on plant floors or equipment platforms. It suits sites with limited headroom, existing horizontal ductwork, or low-profile layout requirements.

Features

- **Low-profile structural design.**
  The horizontal layout can significantly reduce the overall equipment height.
- **Large gas–liquid contact area.**
  The packing layer provides the absorbent liquid with a large wetted surface area.
- **Suitable for a wide range of absorbable gases.**
  Different types of pollutants can be treated by selecting different scrubbing liquids.
- **Multiple system configurations available.**
  Automatic chemical dosing, pH control, mist elimination, and other systems can be configured.
- **Multiple corrosion-resistant materials available.**
  PP, FRP, and other materials are available.

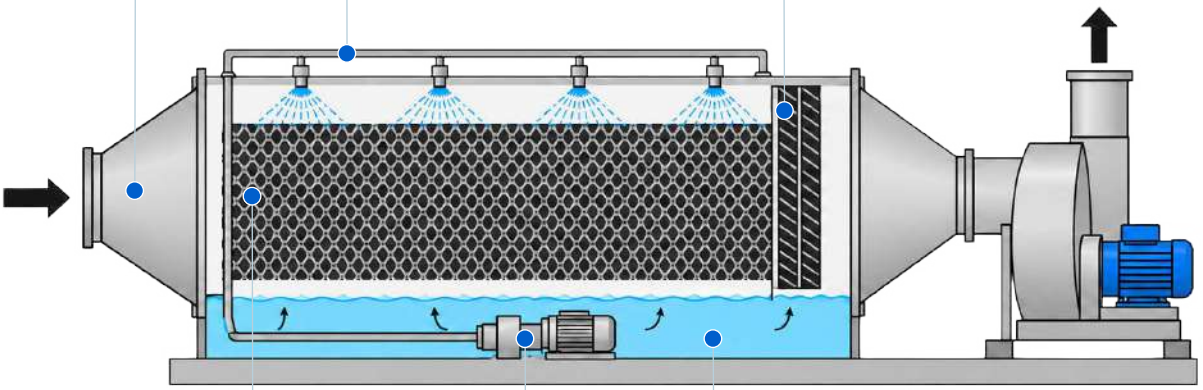
Structure

The horizontal wet scrubber mainly consists of the following components:

Tower Body:
Houses the packing, spray system, and mist eliminator, and provides space for gas-liquid contact.

Spray System:
Consists of spray piping and nozzles, uniformly distributing the recirculating liquid over the top of the Packing Layer.

Mist Eliminator:
Removes liquid droplets entrained in the treated gas.

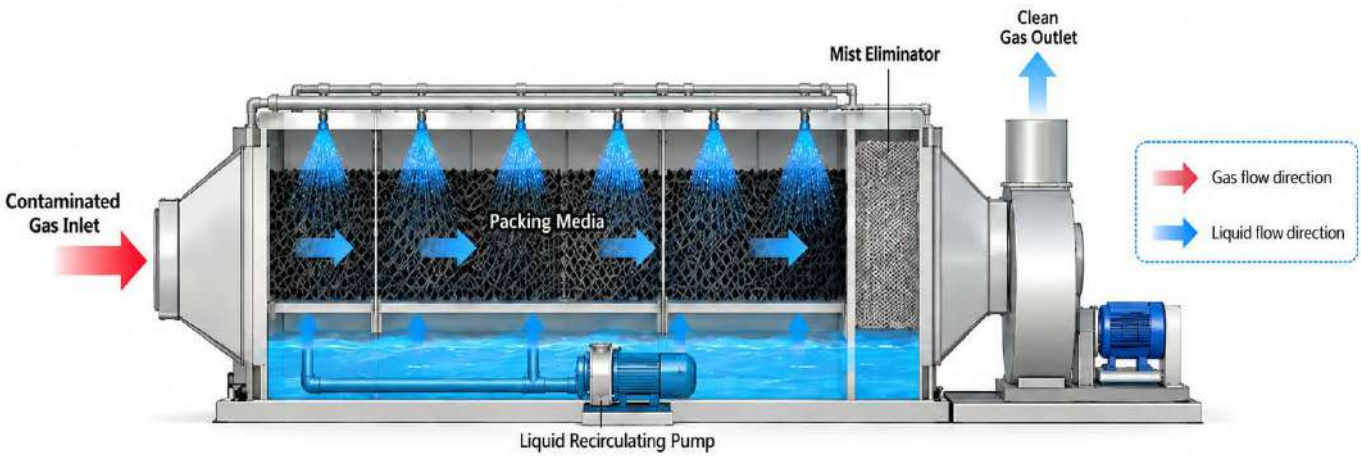


Recirculation Tank:
Stores and collects the scrubbing liquid.

Recirculation Pump:
Recirculates the scrubbing liquid from the recirculation tank to the spray system.

Packing Bed:
The core gas-liquid mass-transfer zone of the scrubber.

Principle



01 Exhaust gas enters horizontally.

Pollutant-laden exhaust gas enters from one end of the equipment and flows horizontally along the scrubber body.

02 Scrubbing liquid spray.

The recirculation pump delivers the scrubbing liquid to the spray system, where it is sprayed from the top or multiple directions.

03 Gas–liquid contact.

Exhaust gas passes through the spray section and packing layer, continuously contacting the scrubbing liquid and the liquid film on the packing surface, where pollutants are absorbed or neutralized.

04 Droplet separation.

The treated gas passes through a mist eliminator to remove entrained droplets.

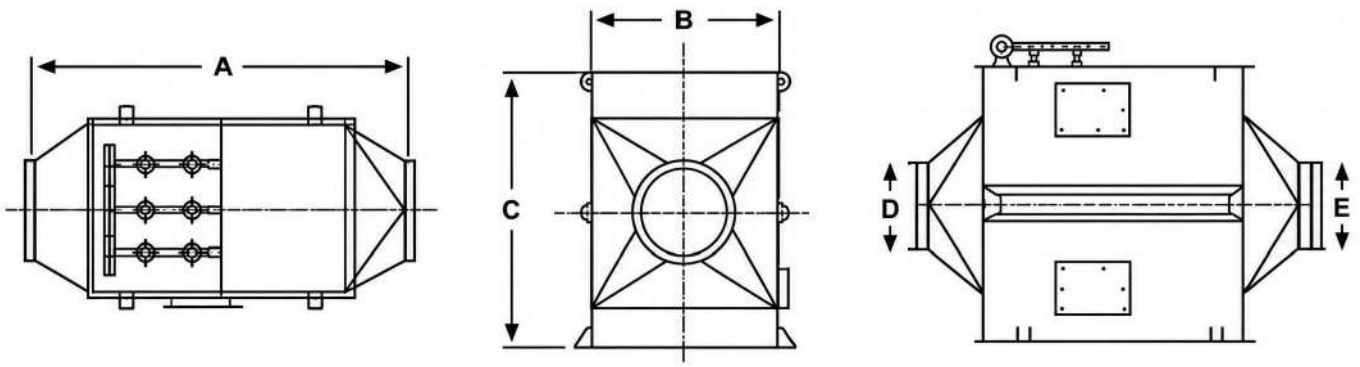
05 The scrubbing liquid is collected and recirculated.

The liquid that has absorbed pollutants flows into the recirculation tank at the bottom of the equipment and is recirculated after makeup water addition, chemical dosing, or blowdown.

06 Clean gas discharge.

The treated exhaust gas is discharged.

Specifications



Model	Airflow Capacity (m^3/min)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
JHS-66	60	3100	600	1800	350	350
JHS-86	80	3110	700	1850	400	400
JHS-106	100	3180	800	1950	450	450
JHS-186	180	3380	1100	2250	600	600
JHS-236	230	3570	1200	2450	650	650
JHS-336	330	3690	1500	2650	700	700
JHS-476	470	3930	1800	2950	950	950
JHS-646	640	4190	2100	3250	1100	1100
JHS-756	750	4330	2300	3450	1200	1200
JHS-956	950	4590	2600	3750	1300	1300
JHS-1056	1050	4610	2700	3850	1400	1400
JHS-1156	1150	4730	2850	3950	1400	1400
JHS-1256	1250	4740	3100	4000	1500	1500
JHS-1606	1600	5250	3600	4400	1700	1700

Note: For reference only.

Project









TECHNICAL REFERENCE

Pollutant Removal Efficiency Table

Pollutant	Pollutant Form (See Note A)	Vertical Tower Removal Efficiency	Horizontal Tower Removal Efficiency
CH_3COOH	G & L	98–99%	95–98%
CH_3COCH_3	G	98–99%	95–98%
Amines RNH_2	G	98–99%	90–98%
Ammonia NH_3	G	97–99%	95–99%
NH_4OH	L	97–99%	90–98%
NH_4NO_3	S & SS	98–99%	98–99%
Anodizing Solutions	L	99%	90–98%
H_3BO_3	L	95–98%	90–98%
[1] Br_2	G	99%	65–80%
[1] CO_2	G	70–85%	98–99%
NaOH	L	99%	90–99%
[1] Cl_2	G	99%	90–98%
[3] ClO_2	G	95–99%	90–98%
H_2CrO_4	L	99%	97–99%
Citric Acid	L	98–99%	95–98%
CH_3CH_2OH	G & L	98–99%	95–98%
[1] HCHO	G & L	98–99%	95–98%
HCOOH	G	98–99%	95–99%
HBr	G & L	98–99%	90–99%
HCl	GL & SL	98–99%	95–99%
HF	G	99%	95–98%
HCN	G	99%	95–99%
[2] RSH	G & L	98–99%	90–98%
[3] NOx	G	60–75%	40–50%
[1] H_2S	G	98–99%	90–98%

Note: [1] NaOH must be used as the scrubbing liquid
[2] H_2SO_4 may be required as the scrubbing liquid
[3] Special chemicals must be used as the scrubbing liquid
[4] If the efficiencies in the table above do not meet your requirements, please contact us to discuss

Note: A: G denotes gas; L denotes liquid particles (3 microns and above); SL denotes liquid particles (below 3 microns); SS denotes solid particles (below 3 microns)

Wet Scrubbing Solutions for Cleaner Air and Emission Control

CONTACT

+86-13315816859 (WhatsApp & WeChat)
Crane@cleairy.com
www.cleairy.com

Room 1012, 10th Floor, Building 1, Huizhong Guangchang, No. 285 Renmin Road, Taocheng District, Hengshui City, Hebei Province, China.

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