centrotherm
clean solutions

CT-W
Wet Scrubber
Point-of-use abatement

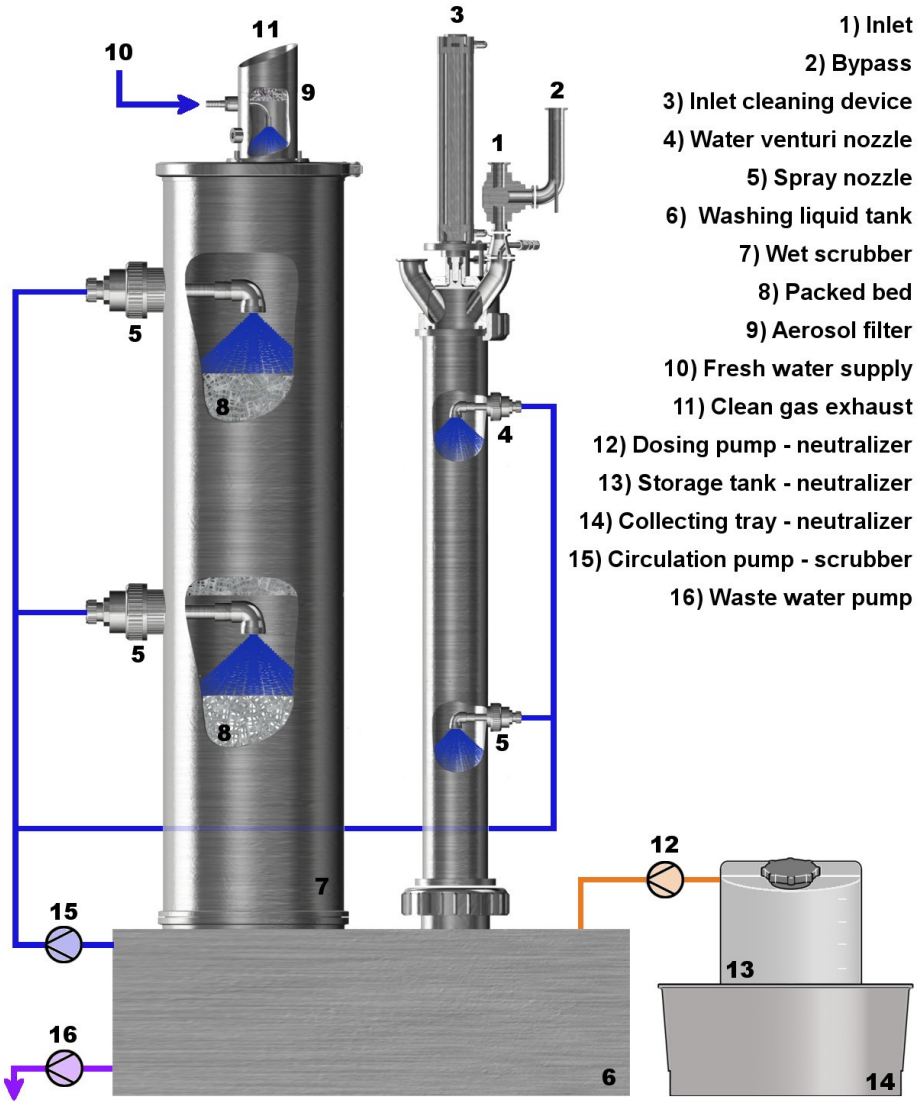
Highly efficient systems for waste gas treatment

Overview

Wet Scrubber systems are a proven solution for the treatment of waste gases emitted in different CVD and etching processes. The new centrotherm clean solutions Wet Scrubber CT-W has a great advantage over common wet scrubbers: A special high pressure e-pump reduces up to 99% of the dust particles in the waste gas flow. The absorbed dust particles are discharged with the waste water.

The CT-W can be installed as a stand alone unit, or as an added module in our burner washer system, the CT-BW. The CT-W wet scrubber can be operated like an independent system or in-line with a CT-BW. For example, if an added wet stage is necessary due to high acid or dust flows to stay in compliance with TA-Luft. When placed post CT-BW, the dust reduction and acid absorption is typically greater than 99,9%.

Schematic flow diagram



System description

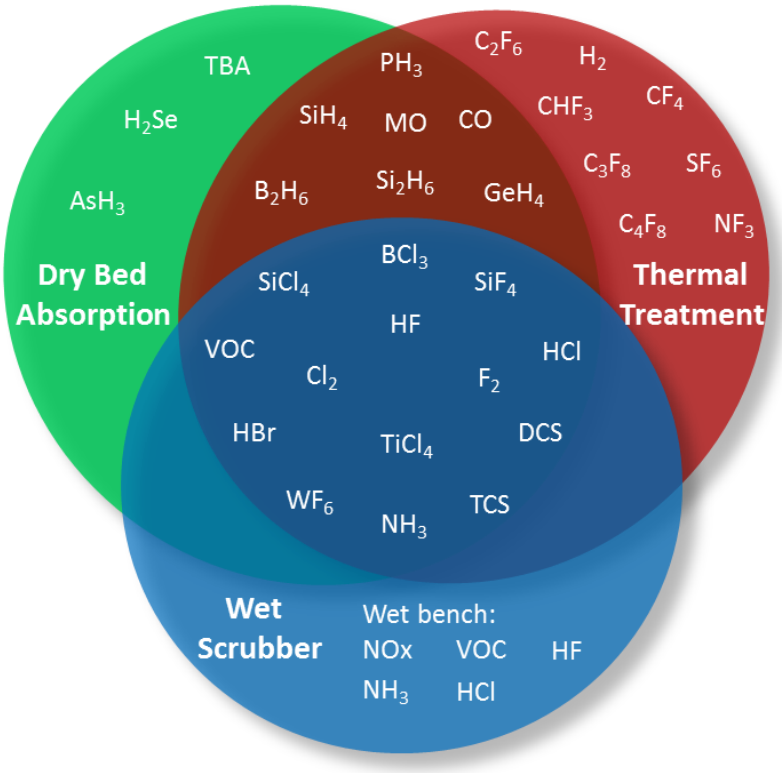
The system is specifically designed to treat HCl, HF, SiH_2Cl_2, $SiCl_4$, NH3, as well as other acidic and alkaline gaseous emissions efficiently, while keeping the CoO low. Depending on the species that need to be treated the CT-W is operated either with an alkaline or acidic neutralizing agent. The packed media washing tower is equipped with highly efficient counter flow spray nozzles that provide high reliability for applications with high waste gas flow rates. The CT-W provides up to four independent inlets that can be connected to atmospheric and sub-atmospheric reaction chambers with up to 3,000 slm total waste gas flow.

Other great advantages are the unique N_2-gas venturi (regulated), water venturi (unregulated), the mechanical inlet cleaning device, waste gas load dependent fresh water dosing and heated inlets (option). All those features ensure low maintenance requirements and a low cost of ownership, especially for gases like $AlCl_3$ or NH_4Cl, that tend to block the inlets over time.

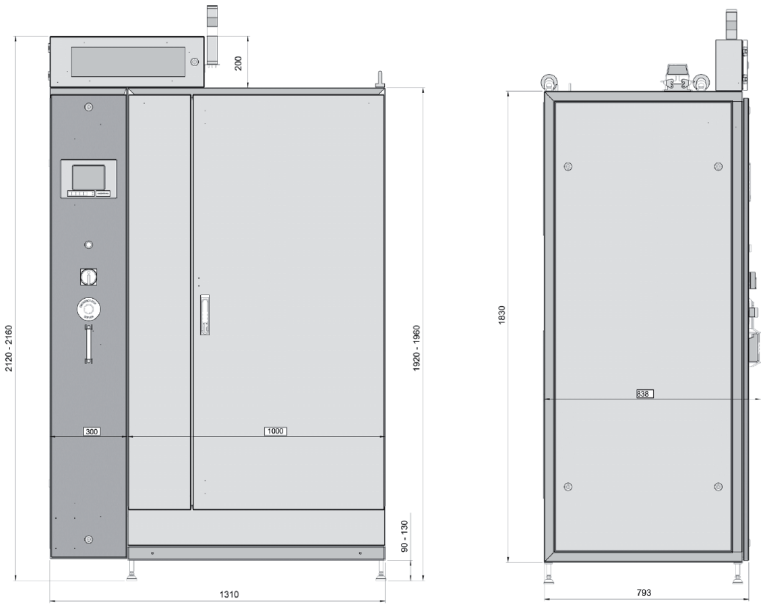
Features and benefits

- Cleaning efficiency up to 99.99%
- Dust reduction up to 99%, without troublesome dry dust disposal
- Very low cost of ownership
- Fully automated
- Highest uptime > 99%
- Integrated process and system monitoring
- Up to four process inlets can be operated simultaneously
- Bypass valving (option)
- Waste gas flow up to 3,000 slm, with three different washing tower sizes available
- SEMI S2 / CE compliant and NFPA79:2002 approved
- Mechanical inlet cleaning device
- Waste gas load dependent fresh water consumption

Typical process gases and abatement technologies



Dimensions



All mesures in mm

Technical data

	Medium	Pressure	Typical flow	Connection/ Material
Power supply	L1/L2/L3/N/PE~400 V 50/60 Hz (20A)	0.6 —13.8 kW *	* depending on the process	
Compressed air		6.0 – 8.0 bar [87.0 – 116.0 psi]	25 – 85 slm	1/2" Swagelok / ss
Water	Softened water	3.0 – 7.0 bar [43.5 – 101.5 psi]	1-4 slm *	1/2" Swagelok / ss
	Waste water		1-4 slm *	NPT tread (PVC-U) 1/2" female, 1" male
Neutralisation	Sorption medium	< 1.0 bar [< 14 psi]	depending on process	ferrule fitting PTFE 1/2"
Nitrogen		4.0 – 8.0 bar [58 – 116 psi]	21 – 61 slm w/o emergency dilution	1/2" Swagelok / ss
Exhaust	Clean gas	-2.5 – -5.0 mbar [-1.0 – -2.0 inH_2O]	depending on process	DN 100 (pipe 104x2)
	Cabinet ventilation	-0.6 – -2.5 mbar [-0.24 – -1.0 inH_2O]	>120 m^3 / h [>70.63 cfm]	DN 100 (pipe 104x2)
Waste gas	Inlet	-0.5 - 130 mbar	up to 3,000 slm	leakage rate <= 1 x 10^{-5} mbar l / s
	Bypass	-0.5 - 130 mbar		leakage rate <= 1 x 10^{-5} mbar l / s connected to AEX
Weight	Control cabinet Gas cabinet	120 kg 350 kg		
	Washing liquid	120 kg		



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