

APZEM®

PROMISING ECO SOLUTIONS

WET SCRUBBER - VERTICAL PACKED BED



Apzem offers custom designed Packed Bed Wet Scrubbers that are used to remove acids, soluble gases, chemicals, fumes and odors. The contaminated air flows through special packing media which helps in removing contaminants.

Based on the application and the contaminant to be removed several factors such as contaminant solubility, Liquid to gas ratio, Packing column height, packing media type, flow rate, Pressure drop across packing, MOC, Site requirements are considered for improving the removal efficiency.

Common Contaminants Removed :

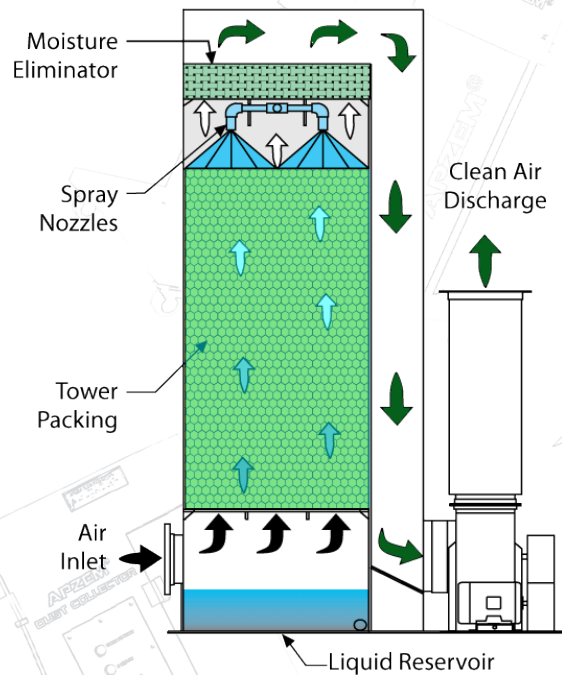
- Acid gas scrubbing – (HCl, HF, HBr, HCN, HNO₃, H₂S, etc.)
- Sulfur compounds (hydrogen sulfide: H₂S, sulfur oxides: SO₂, SO₃)
- Ammonia (NH₃)/amines
- Chromic acids (H₂CrO₄, H₂CrO₇)
- Ethylene oxide (C₂H₄O)
- Boron compounds (BCl₃, BF₃)



VERTICAL PACKED BED - WORKING

The contaminated gas flows up while recirculating liquid sprays downward into the packed bed. The gases are absorbed by the scrubber solution solubility level and by chemical reaction.

The vertical counter-flow design typically provides the best scrubbing efficiency of vapors and are commonly used in application removals of odors such as Amines, Ammonia, Diamines, H₂S, Mercaptans, Organic Sulfides and Skatole .



Specification

Max Air Flow	100000 CFM
Efficiency	upto 99.9% capturing efficiency
MOC	FRP PVC and CPVC Polypropylene and polyethylene Stainless steel / Mild steel FRP-lined mild steel
Finish	Powder coated / Matt finish
Power option	3 Phase
Customization	Yes. Available as needed.

Advantages

99% Efficient for various applications.
Relatively low pressure drop.
High mass transfer efficiency.
Require relatively small space.
Vertical counter-flow design provides the best scrubbing efficiency of vapors.
High removal efficiencies & Low Maintenance Cost.
Can sustain highly corrosive atmosphere.
Flexible Design, Rugged Construction.

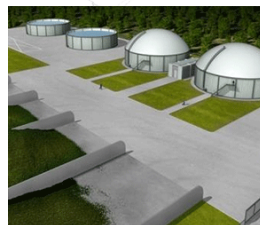
Applications



Paper & Pulp



Metal Processing



Landfill & Biogas



Wastewater Treatment



Steel Processing



Chemical Fumes



Fertilizer



Food Processing

VERTICAL PACKED BED SCRUBBER

Technical Datasheet

Model No.	Maximum CFM	Tower Dia (in mm)	Recirculation range (in Min - Max*)	Flow LPM	Scrubber Height	Packing Size	Max Temperature Withstand upto	Inlet & Outlet (Equi-Dia)	Scrubber Pump Capacity (Hp)	Min Storage tank cap (In L)	Packing column Height (ft)	Pressure Drop Across the Column
APBH-30	390	300	15	27	3050	1" Pall Rings	80 deg.C	150	0.5	250	4.6'	55
APBH-45	880	450	34	57	3200	1" Pall Rings	80 deg.C	200	0.5	300	4.6'	55
APBH-60	1,570	600	61	95	3350	1" Pall Rings	80 deg.C	250	1	400	4.6'	55
APBH-75	2,450	750	95	152	3340	1" Pall Rings	80 deg.C	300	1.5	550	4.6'	55
APBH-90	3,530	900	133	220	3800	1" Pall Rings	80 deg.C	350	2	750	4.6'	55
APBH-105	4,810	1050	182	296	4100	1" Pall Rings	80 deg.C	400	3	900	4.6'	55
APBH-120	6,280	1200	236	380	4250	1" Pall Rings	80 deg.C	500	3	1100	4.6'	55
APBH-135	7,950	1350	304	486	4550	1" Pall Rings	80 deg.C	550	5	1400	4.6'	55
APBH-150	9,815	1500	372	600	4550	1" Pall Rings	80 deg.C	600	5	1700	4.6'	55
APBH-165	11,880	1650	448	722	4700	1" Pall Rings	80 deg.C	650	7.5	2000	4.6'	55
APBH-180	14,135	1800	532	859	5000	1" Pall Rings	80 deg.C	700	7.5	2300	4.6'	55
APBH-195	16,590	1950	631	1007	5000	1" Pall Rings	80 deg.C	750	10	2700	4.6'	55
APBH-210	19,240	2100	730	1167	5150	1" Pall Rings	80 deg.C	800	10	3100	4.6'	55
APBH-225	22,090	2250	836	1345	5150	1" Pall Rings	80 deg.C	900	12.5	3550	4.6'	55
APBH-240	25,130	2400	958	1528	5300	1" Pall Rings	80 deg.C	950	12.5	4000	4.6'	55
APBH-255	28,370	2550	1079	1725	5300	1" Pall Rings	80 deg.C	1000	15	4500	4.6'	55
APBH-270	31,808	2700	1208	1930	5600	1" Pall Rings	80 deg.C	1050	20	5000	4.6'	55
APBH-285	35,440	2850	1345	2158	5600	1" Pall Rings	80 deg.C	1100	20	5550	4.6'	55
APBH-300	39,270	3000	1490	2386	5600	1" Pall Rings	80 deg.C	1150	20	6150	4.6'	55
APBH-315	43,300	3150	1642	2630	5750	1" Pall Rings	80 deg.C	1200	25	6750	4.6'	55
APBH-330	47,516	3300	1805	2888	5750	1" Pall Rings	80 deg.C	1250	25	7400	4.6'	55
APBH-345	51,934	3450	1972	3154	5900	1" Pall Rings	80 deg.C	1350	30	8050	4.6'	55
APBH-360	56,550	3600	2147	3435	6200	1" Pall Rings	80 deg.C	1400	30	8750	4.6'	55
APBH-375	61,360	3750	2333	3732	6500	1" Pall Rings	80 deg.C	1450	40	9500	4.6'	55
APBH-390	66,366	3900	2523	4028	6550	1" Pall Rings	80 deg.C	1500	40	10250	4.6'	55
APBH-405	71,570	4050	2721	4351	6800	1" Pall Rings	80 deg.C	1550	39.5	11050	4.6'	55
APBH-420	76,970	4200	2926	4682	6800	1" Pall Rings	80 deg.C	1600	50	11900	4.6'	55
APBH-435	82,565	4350	3135	5016	7400	1" Pall Rings	80 deg.C	1650	50	12700	4.6'	55
APBH-450	88,360	4500	3359	5366	7700	1" Pall Rings	80 deg.C	1750	60	13600	4.6'	55
APBH-465	94,345	4650	3587	5734	8000	1" Pall Rings	80 deg.C	1800	60	14500	4.6'	55
APBH-480	1,00,530	4800	3819	6110	8300	1" Pall Rings	80 deg.C	1850	60	15450	4.6'	55

VERTICAL PACKED BED SCRUBBER

Contaminants Removed

Acid gasses

Hydrogen Sulphide

Ammonia

Sulfur Oxides

Halogen vapors

N-Methyl pyrrolidone

Chromic Acids

Ethylene Oxide

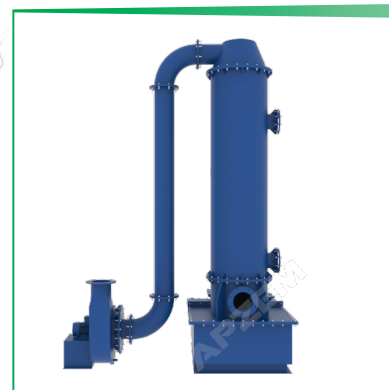
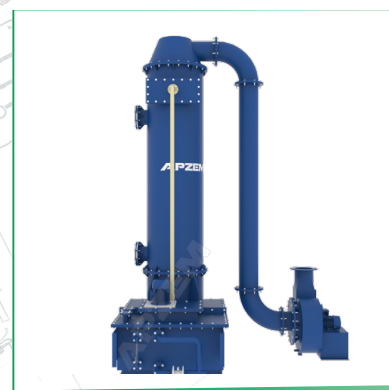
Formaldehyde

Caustics and Hydroxides

Ethylene Glycol

VOC abatement

NOx



Accessories

APBH_001	Mist eliminator
APBH_002	Recirculation liquid distribution nozzle system
APBH_003	Recirculation piping system
APBH_004	Packing support grid
APBH_005	Scrubber inlet (Can be round or rectangular)
APBH_006	Recirculation sump level control system
APBH_007	Clear packing removal portal
APBH_008	Clear packing fill door
APBH_009	Water Level Indicator
APBH_010	H2S Sensor
APBH_011	PH Monitor
APBH_012	Dosing System
APBH_013	Packing material
APBH_014	Pump
APBH_015	Motor
APBH_016	Drain valave



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