

BIOLOGICAL SCRUBBER



CHEMICAL-FREE H₂S REMOVAL FROM BIOGAS BY BIO-TRICKLING FILTER

Hydrogen sulphide carried in raw biogas attacks the digester, storage tanks, pipe and duct work and the exhaust heat exchanger, drives up CHP maintenance and puts statutory emission limits out of reach.

The CRA Biological Scrubber desulphurises the gas without chemicals at any stage. Raw biogas is passed through a packed column irrigated with water and nutrients, where sulphur bacteria (thiobacillus) oxidise the H₂S. The main reduction product is sulphuric acid, with a small proportion of elementary sulphur, and the process is customisable to achieve 10 ppm H₂S at outlet.

Manufactured under technological collaboration with M/s S & H Umweltengineering, Germany, these bio-trickling filters are installed at more than 200 locations for H₂S, VOC and odour control. Suitable for sites with high gas flow, and for customers with a waste water treatment facility available to process the sulphate discharge.



CRA ADVANTAGE

+ No Chemicals at Any Stage	+ Optimal Design & Performance + Accomodate Special Requirements
+ Customisable to 10 ppm H ₂ S at Outlet	+ On-Time Delivery + Responsive & Organized Team
+ German Technology, 200+ Installations	+ Stringent Quality Management + Fast Turnaround
+ Reduced Maintenance, No Corrosion Damage	+ Cost Effective Maintenance Packages + Long-Term CRA Support

APPLICATIONS

Supplied for H₂S removal, VOC and odour control across biogas and process plants

- + Waste Water Treatment Plants
- + Pumping Stations
- + Rendering Plants
- + Pulp and Paper Plants
- + Food Processing Plants
- + VOC & Odour Control Duty

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Learn more at www.cra.energy

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WORKING & ENQUIRY



BIOLOGICAL DESULPHURISATION IN TWO PROCESS STEPS, NO CHEMICAL DOSING

WORKING

- + Raw biogas enters the packed column counter-current to water and nutrients trickled over the packing
- + Sulphur bacteria (thiobacillus) colonise the packing and oxidise the H₂S held in the liquid film
- + Step 1 — $2 \text{H}_2\text{S} + \text{O}_2 \rightarrow 2 \text{S} + 2 \text{H}_2\text{O}$
- + Step 2 — $2 \text{S} + 3 \text{O}_2 + 2 \text{H}_2\text{O} \rightarrow 2 \text{H}_2\text{SO}_4$
- + Sulphate-bearing liquor is bled to the site waste water treatment facility; a small proportion of elementary sulphur is produced
- + Gas drying and fine desulphurisation follow the column to deliver desulphurised biogas to the CHP

WHY DESULPHURISE

- + Protect the CHP
- + Reduce CHP maintenance demand
- + Keep statutory emission limits
- + Avoid corrosion at the digester, storage tanks, pipe and duct work and exhaust heat exchanger
- + Extend oil changing intervals

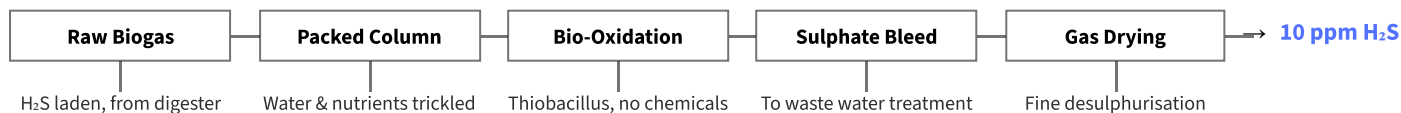
Intensive scrubbing allows very high H₂S reduction rates, customisable to 10 ppm at outlet.

ENQUIRY DATA

Please include the following specifications in your inquiry

Gas	Duty	Site
Gas composition	Desired H ₂ S concentration	Project details
Flow rate, Nm ³ /hr	Environmental norms to be met	Ambient conditions
Incoming H ₂ S concentration	Waste water facility available	Available plot area

Process Flow



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