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Akılcı Çözümler



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ABOUT CLEVER

Clever Engineering delivers high-precision environmental solutions through a disciplined technical lens. Specializing in wastewater management, gas treatment, and biogas recovery, we execute end-to-end EPC projects backed by rigorous laboratory analysis and pilot trials. By synchronizing mechanical engineering with industrial automation, we provide durable, high-performance infrastructure for global partners.

BIODESOX

BIOLOGICAL GAS DESULPHURISATION

H₂S REMOVAL WITH THE LOWEST OPERATIONAL COSTS



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www.clevermuhendislik.com

info@clevermuhendislik.com

+90 (216) 594 54 88

+90 (507) 509 34 66





Trabzon Landfill
3000 Nm³/h

BIODESOX TECHNOLOGY

The Biodesox technology is a simple way of desulphurisation without the use of chemicals. The system operates as a biotrickling filter. In the bioreactor, bacteria convert the H₂S into sulfuric acid. By creating the optimal conditions, the most effective desulphurisation bacteria are selected.

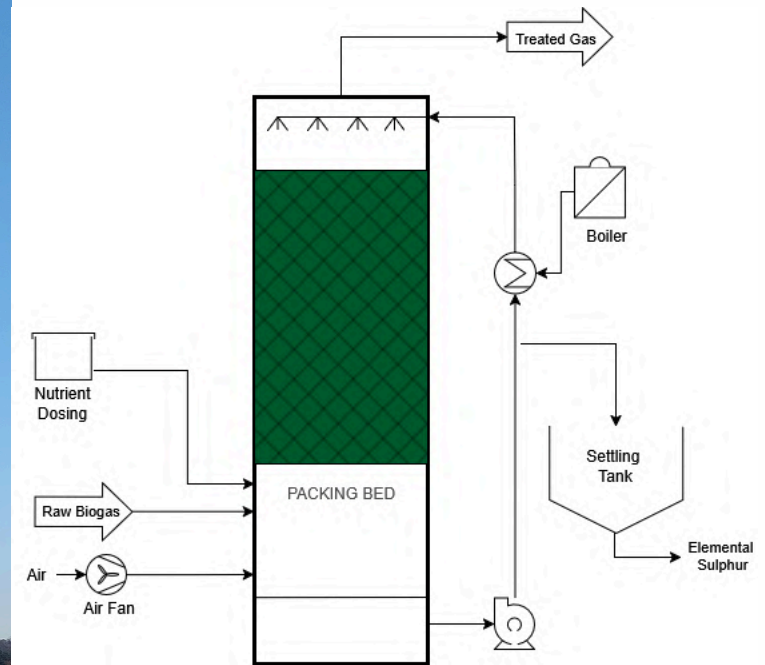


Biological Desulfurization Process (Biodesox)

- **Bacterial Conversion:** Specific bacteria, such as *Acidithiobacillus*, convert H₂S into elemental sulfur or sulfuric acid, depending on the available oxygen concentration.
- **Oxygen Control:** An automated system regulates oxygen levels by adjusting air injection based on biogas flow and outlet oxygen concentration.
- **System Dynamics:** Water and nutrients are automatically refreshed, sprayed over the bacteria, and circulated throughout the bioreactor.
- **Thermal Optimization:** A heat exchanger maintains the process at the optimum temperature by heating the circulating water.
- **Waste Management:** Produced sulfuric acid and excess biomass are continuously removed from the process via the drain.



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In the presence of adequate oxygen, H₂S is oxidised to a large extent (%80-85) to H₂SO₄:



In the absence of oxygen the main product is S₀ :



WHY BIODESOX

- ✓ NO CHEMICAL
- ✓ HIGH EFFICIENCY H₂S REMOVAL
- ✓ ENVIRONMENTAL FRIENDLY
- ✓ FORMATION OF ELEMENTAL SULFUR



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