

PlanET BIOGAS

# Desulfurization with MicroNOX ON16<sup>®</sup>

For the Treatment of Hydrogen Sulfide ( $H_2S$ )  
at the source in Biogas Plants



## Elevate your Biogas Quality with MicronOX ON16

### How does a biogas plant work?

Biogas is generated by decomposing organic waste under anaerobic conditions (absence of O<sub>2</sub>) in Anaerobic Digesters. Biogas is a mixture of methane, CO<sub>2</sub> and other trace gases.

Biogas also contains varying levels of hydrogen sulfide (H<sub>2</sub>S), depending on the organic materials used and the biological activity within the anaerobic environment.

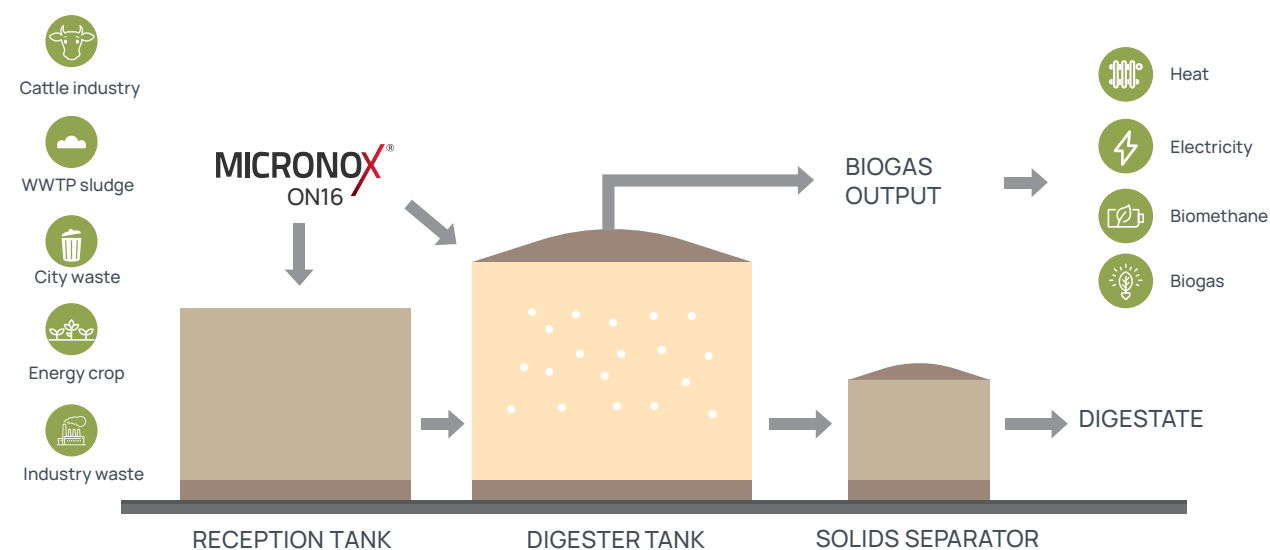
### Hydrogen sulfide and the biogas plant

Hydrogen sulfide (H<sub>2</sub>S) can accumulate to thousands of parts per million (ppm) levels in anaerobic digesters, creating **significant safety, corrosion and gas quality issues**. Without preventative treatment, these high levels of H<sub>2</sub>S will require expensive, high-maintenance mitigation with large filtration systems. Thus, hydrogen sulfide requires **early intervention to minimize its negative impact on gas quality such as toxicity and corrosivity**.



## The Solution: MicroNOX ON16

MicroNOX ON16 is a **m micronized powder** that has been the object of extensive application studies, with **proven treatment success in biogas plants**. It is a mixture of **iron oxide-hydroxide and other functional oxides** specially developed to be added directly to the anaerobic digester. MicroNOX is added in regular doses for preventative treatment, reacting with hydrogen sulfide to create **iron sulfide and sulfur** byproducts that are easily discharged with outgoing digestate material. Both byproducts are common and valuable components of agricultural fertilizers.



## Simplify your Operations with a User-Friendly and Effective Solution

### The Benefits of MicroNOX ON16

- Avoids toxicity and physical risks: Micronox ON16 is not harmful to people, equipment or the environment.
- Safe and clean handling: Stored in 44 lb (20 kg) bags or 1 ton (0.91 tonne) supersacks which can be added directly to pre-mixing and reception tanks. Optional water-soluble MicroNOX packaging allows bags to be added without having to open them.
- No special storage required: Micronox ON16 can be stored indoors or outdoors without special containment.
- Cheaper and more efficient desulfurization – an effective method for capturing H<sub>2</sub>S that also improves reactor productivity. Reduces activated carbon replacement costs for RNG upgrading systems and reduces operating costs for downstream plant equipment (e.g. boilers and combined heat and power units).
- Non-corrosive iron source - unlike ferric chloride, MicroNOX does not cause corrosion, which helps critical equipment avoid expensive repair and replacement from corrosion damage.
- Improves digestate characteristics – produces iron sulfide and sulfur which are components that improve the properties of fertilizers.

### Dosage Table

MicroNOX® General Dosing Recommendations						
Manure Feed Rate	25,000 95,000	50,000 190,000	75,000 285,000	100,000 380,000	150,000 570,000	200,000 760,000
MicronOX® Bags Added Daily	1	2	3	4	5	6

● Gallons Per Day (GPD) ● Liters per day (LPD)

### Why MicroNOX ON16 is the best H<sub>2</sub>S treatment option

Comparative table of the efficiency of different methods of desulfurization	MicronOX ON16	IRON CHLORIDE	BIOLOGICAL DESULFURIZATION	OXYGEN INJECTION
Corrosivity	✓✓✓	✗✗✗	✗✗	✓
Harmful substances	✓✓✓	✗✗✗	✓✓✓	✓✓✓
Methane concentration	✓✓✓	✓✓	✗✗	✗
Handling	✓✓	✗✗✗	✓✓	✓✓
Friendly with the bacterial chain	✓✓✓	✗✗	✗	✗
Efficiency	✓✓✓	✓✓✓	✓✓	✓✓
Risk of explosion	✓✓✓	✓✓✓	✗	✗✗
Buffer effect	✓✓✓	✗✗✗	✗✗✗	✗
Undesirable reaction product	None	Hydrochloric acid	Elemental Sulfur	Elemental sulfur

✓ Good ✗ Bad

## PlanET Biogas

Servicing North America since 2006, PlanET Biogas ranks among the leading biogas technology providers with 650+ anaerobic digestion systems and 90+ AD to RNG plants operating worldwide.

## PROMINDSA

PROMINDSA is a company that extracts, transforms, develops and supplies minerals and products for industry.



They are present in markets as diverse as paint, biogas, construction, glass, asphalt, mortars, concrete, foundries and oxide supplies to more than 70 countries worldwide.

Manufactured by:



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