

MICRONOX[®]
BIOX



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PRODUCT TO DESULPHURIZE

What is biogas?

Biogas is a **combustible gas** that is generated by biodegradation reactions of organic matter, through the action of microorganisms and other factors in an anaerobic environment.

It is composed mainly of **methane** CH₄ (g), **carbon dioxide** CO₂ (g) and **sulphydic acid** H₂S (g).

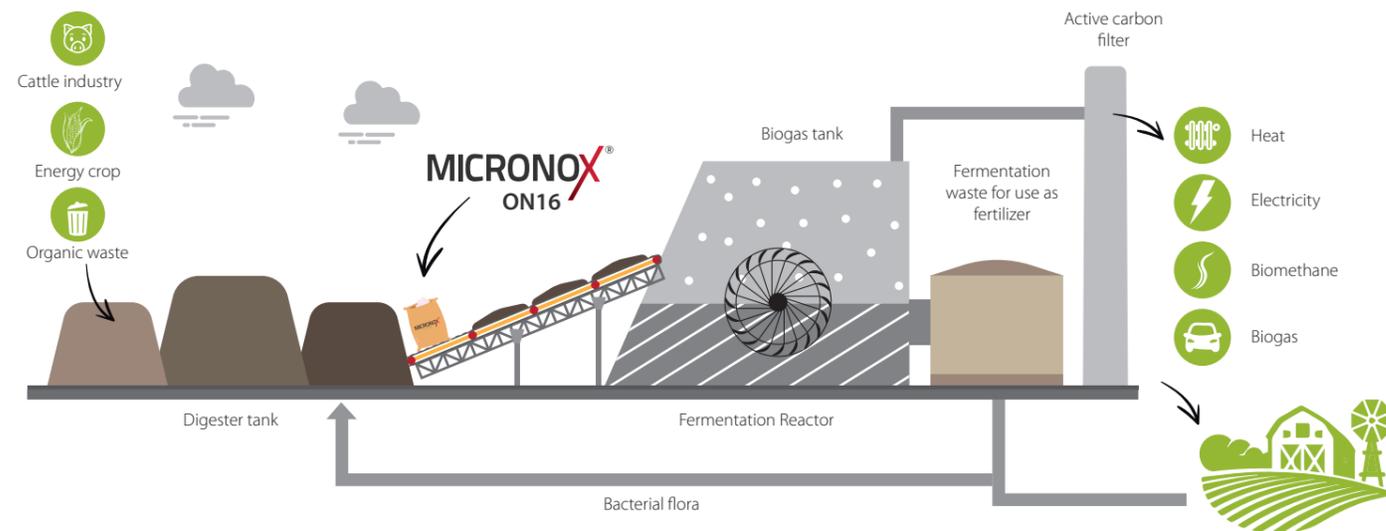
biogas is a source of renewable energy, generated from organic waste.



How does a biogas plant work?

A biogas generation plant processes urban, agricultural or **forest organic materials under anaerobic conditions** (absence of oxygen). The decomposition and fermentation of these materials **produce a gas**, composed essentially of methane, which also contains **varying levels of sulphydic acid** (H₂S) depending on the organic materials used.

The presence of sulphydic acid (H₂S) requires a **specific intervention** through which its toxicity and **corrosivity are minimized**. Only then will **the process of biogas and its use as an energy source be complete**.



MICRONOX[®] ON16, an innovative product to desulfurize the biogas

MICRONOX[®] ON16 It is a **mixture of iron oxides-hydroxides and other functional oxides** specially developed to be added directly into the fermentation reactor. This product has been the object of extensive preliminary studies, **with successful application in biogas plants**. It reacts with hydrogen sulfide to generate **iron sulfide and sulfur**. Both elements are common components of fertilizers leading to improved properties.



Why is MICRONOX[®] ON16 the most suitable method to capture H₂S from biogas?

Comparative table on the efficiency of different methods of desulphurisation	MICRONOX [®] ON16	IRON CHLORIDE	BIOLOGICAL DESULPHURISATION
Corrosivity	✓✓✓	✗✗✗	✗✗
Harmful substances	✓✓✓	✗✗✗	✓✓✓
Methane concentration	✓✓✓	✓✓	✗✗
Handling	✓✓	✗✗✗	✓✓
Friendly with the bacterial chain	✓✓✓	✗✗	✗✗
Efficiency	✓✓✓	✓✓✓	✓✓
Risk of explosion	✓✓✓	✓✓✓	✗
Buffer effect	✓✓✓	✗✗✗	✗✗✗
Undesirable reaction product	None	Hydrochloric acid	Sulfuric acid

✓ Good ✗ Bad

Benefits of MICRONOX[®] ON16

- It avoids toxicity and physical risks:** MICRONOX[®] ON16 is a product that is not harmful to people, equipment or the environment.
- Safe and clean handling:** It can be added simply, without the need for complicated dosing systems.
- Absence of risk of explosive mixtures:** It makes the injection of oxygen unnecessary.
- Cheaper and more efficient desulfurization:** Not only is it an effective method of capturing H₂S, but it also improves reactor productivity.
- It minimizes corrosion damage:** It reduces equipment maintenance costs.
- It improves compost characteristics:** The use of MICRONOX[®] ON16 does not generate any toxic by-products, and produces iron sulfide and sulfur, which are components that improve the properties of fertilizers.

And also...

MICRONOX[®] ON16 does not require special storage. Its use does not require any specific training since it does not involve the handling of dangerous substances. In addition, MICRONOX[®] ON16 is stored in 20 kg paper bags which can be added directly to the process without having to open them. This storage prevents fluctuations in sulfur concentrations in the substrate.

