

OPS' **UNIQUE PROPERTIES** MAKE IT AN **EFFECTIVE CATALYST**, INCREASING THE **EFFICIENCY** AND **PROFITABILITY** OF BIOGAS GENERATION.

BENEFITS OF OPS IN BIOGAS PRODUCTION

OPS act as catalysts in the anaerobic digestion process, where bacteria break down organic matter to produce biogas. The high specific surface area and semiconductor properties of OPS facilitate interaction with bacteria, accelerating the decomposition of organic matter and increasing biogas production.

20% increase in **methane production** performance

Elimination of hydrogen sulfide gas (H₂S) by **99%**

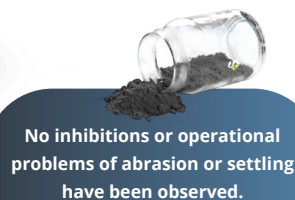
12% reduction in **CO₂** production



Stabilizes the digester against substrate variations

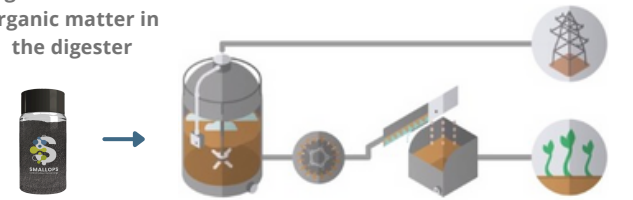
24% increase in the **degradation of phytotoxic compounds** that cause inhibition, such as polyphenols

Final digestate classified as **class A organic amendment**



HOW TO USE

OPS are introduced together with the organic matter in the digester



REAL CASE IN PLANT

- Each bag of OPS weighs 7 kg. The optimal dosage at this plant is 3 bags per day, with an average feed rate of 500 m³ of WWTP sludge. The average CH₄ content is 69%.
- The average daily increase is 5.73 MWh, equivalent to 574.3 Nm³ of CH₄ per day, or 23.9 Nm³ of CH₄ per hour. In this case, this increase corresponds to an average increase in methane production efficiency of 21.30%.
- A daily saving of 39 kg of ferric chloride, or 1.17 Tm³ per month, was achieved.

The implementation of OPS has generated an additional 2.09 GWh per year, or 209,619.5 Nm³ of CH₄ per year, and an annual saving of 14.24 tons of ferric chloride. Since this plant cogenerates biogas, its annual profit is €64,023.91.