



**Customer:**  
GAEC de la pépinière

**Place:**  
Saint Aubin Bonneval - FR

**Date:**  
2019

**Sector:**  
Agricultural

# DESULFURIZATION OF BIOGAS WITH CAMPURE 32

## G.A.E.C de la pépinière

« GAEC de la pépinière », a “Groupement Agricole d'Exploitation en Commun” (GAEC: jointly run farms), was founded in 1987 in Saint Aubin de Bonneval (North West of France) by 4 partners.

It now employs 1 person and manages 230 hectares of mixed crops (wheat, corn...) and livestock farming (120 dairy cows and production of veal calves).

## Methanisation Unit

The methanisation unit was commissioned in 2012 for an investment of 900,000 €.

The unit is composed of a digester, a post-digester, a storage pit for the feedstock and a pit containing the liquid digestate.

Biomass feedstock is composed of solid and liquid manure for 70 % complemented by 30 % of plant (wheat, corn and catch crop).

## Biogas

The biogas is converted into heat and electricity (cogeneration) by a 250 kW Scania Dual Fuel engine. The generated heat is used on the farm and the electricity is sold and fed into the local power grid.

The methanisation unit produces around 150 m<sup>3</sup>/h of biogas, which is contaminated with significant amounts of hydrogen sulphide (H<sub>2</sub>S). To protect the engine from corrosion, it is necessary to remove the H<sub>2</sub>S from the biogas. Engine corrosion leads to unscheduled maintenance, operational downtime and loss of process efficiency.

To remove the H<sub>2</sub>S, CAMFIL offers CAMPURE 32, a specific molecular filtration media with a high H<sub>2</sub>S adsorption capacity.



### A media with a high adsorbent power

CAMFIL offers the market a cost effective media for the removal of hydrogen sulphide generated during the production of biogas by anaerobic digestion: CAMPURE 32. This high-quality chemical adsorbent is a combination of adsorbents, treated by a dedicated chemical impregnation system.

This media has a lower dust content compared to classical carbon and also exhibits a longer life time.

CAMPURE 32 is certified in accordance with UL 900. The low flammability characteristics make it a much safer media than carbon. This is an important feature for use in an environment where ignition of adsorbent media beds is a real risk, e.g. biogas production.



### Proven efficiency in real operating conditions

An evaluation of CAMPURE 32 in real operating conditions was carried out at GAEC de la pépinière on early 2019. 500 litres of activated carbon from the existing filter vessel were replaced by CAMPURE 32 without any modifications.

The upstream  $H_2S$  concentration, before filtration, usually fluctuates between 150 and 200 ppm. After filtration, the downstream  $H_2S$  concentration should be lower than 10 ppm to ensure engine reliability. Above this threshold, the biogas supply to the engine is automatically stopped in order to protect it from damage caused by hydrogen sulphide attack.

### Pascal's and Pierre-Charles's testimony from the GAEC

"CAMPURE 32 has the advantage of having an attractive price compared to other activated carbon in the market, while having an excellent  $H_2S$  adsorption rate. The life time of the product should be longer, which will allow us to delay the media replacement.

We could also notice that the quantity of dust during the can loading / unloading was low."

#### Main advantages of CAMPURE 32:

- High quality chemical adsorbent.
- Ideal for biogas application.
- Effective for the treatment of :
  - Hydrogen sulphide ( $H_2S$ )
  - Sulfur dioxide ( $SO_2$ )
  - Nitrogen dioxide ( $NO_2$ )
- UL 900 classified for flammability
- Available in big-bags of 500 kg and boxes of 25 kg
- Vacuum package to ensure high quality and low dust content.

### Monitoring of $H_2S$ concentration at GAEC

