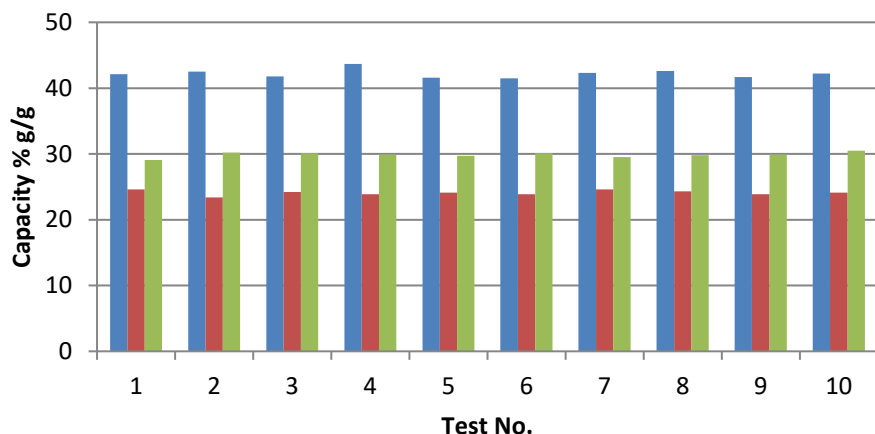


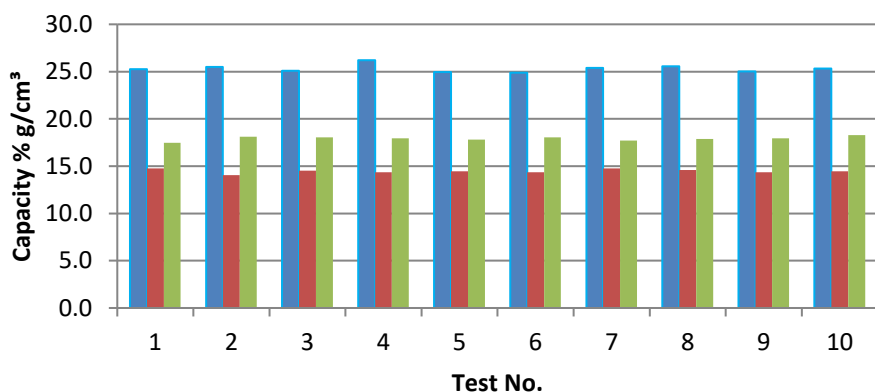
Sulfisorb Plus Performance against H₂S

Comparison against traditional Hydrogen Sulfide Removal Impregnated Activated Carbons

Capacity Comparison % g/g



Capacity Comparison % g/cm³



Key
Sulfisorb Plus
3% NaOH impregnated carbon
5% KOH impregnated carbon

Sulfisorb Plus is an enhanced impregnated activated carbon for sulfur removal applications.

Carbon Activated Europe carried out a series of trials under controlled conditions to compare performance in the laboratory.

Sulfisorb Plus can easily replace traditional alkali impregnated carbons installed in existing carbon filters without any modifications to the existing filter system.

If you are interested in getting your carbon filter to last longer, please contact Carbon Activated Europe for further information.

Detailed case studies of field applications are available on request.

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SAFETY MESSAGE:
 Activated carbon is a strong oxidizing agent and wet activated carbon preferentially removes oxygen from air. Take care when entering confined spaces where wet activated carbon is present.

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Biogas Field Trial: Sulfisorb Plus

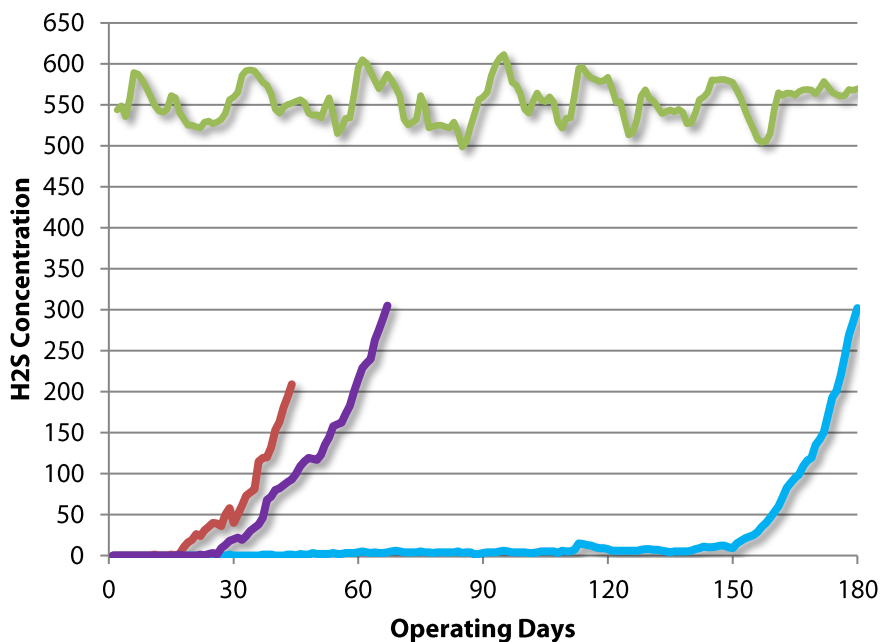
Trial dates: April - November 2014

Sulfisorb Plus 4mm was installed at small waste to energy site to evaluate the performance in the field.

The site had been experiencing difficulties with potassium iodide and alkali impregnated carbons which were underperforming compared to expectations.

The site operated 3 identical filters in parallel and monitored inlet and outlet concentrations continuously. The maximum outlet tolerance for H₂S was 100ppm.

At the end all filters were switched over to Sulfisorb Plus due to the improved filter life between carbon changes.



Key
 Inlet concentration
 Outlet concentration Sulfisorb Plus
 Outlet concentration KOH impregnated carbon
 Outlet concentration KI impregnated carbon

For further information about Biogas upgrading carbon please contact Carbon Activated Europe.

The filter system contained 3 parallel filter vessels, each holding 1m³ and the engine tolerance was 100ppm H₂S.

The air flow was divided equally amongst the filters and then recombined to feed gas into a single engine.

Filter 1 contained KI impregnated carbon filter 2 contained KOH impregnated carbon and filter 3 contained Sulfisorb Plus impregnated carbon.

Once the carbon in filters 1 and 2 was exhausted, they were replaced with Sulfisorb Plus. The outlet concentration of filter 3 was permitted to rise to 300ppm since the other filters.

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Agricultural Biogas Upgrading Study

Lincolnshire, England

Carbon Activated Europe supplies Activated Carbon directly to biogas site operators and service providers around UK and Europe. Sulfisorb Plus is the most popular grade for agricultural biogas plants offering excellent value and performance for biogas operations.

Sulfisorb Plus offers a broad-spectrum treatment solution for elimination of:

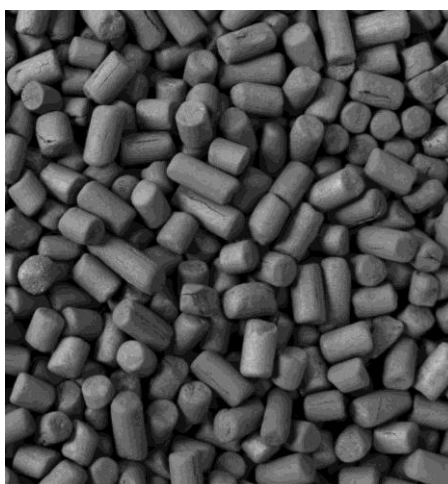
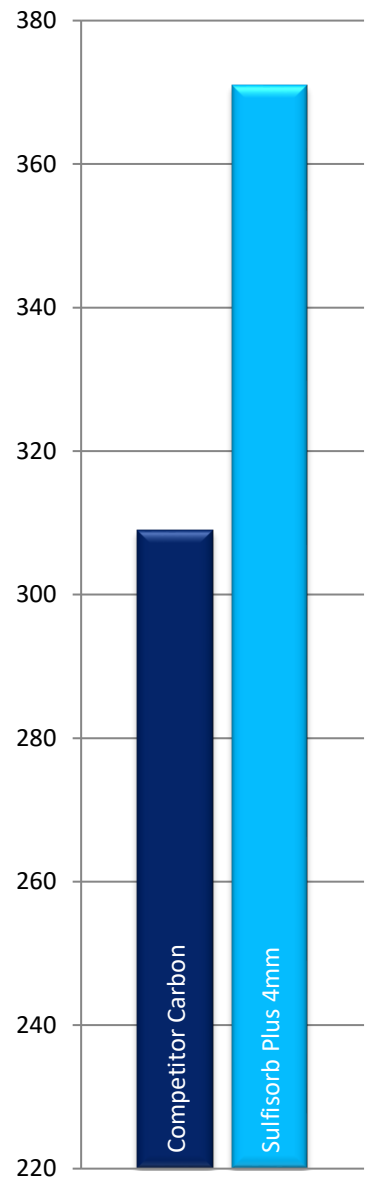
- Hydrogen Sulfide (H₂S)
- Volatile Organic Compounds (VOCs)
- Mercaptans
- Siloxanes

The supply of Sulfisorb Plus Activated Carbon to an agricultural site in the north of England solved for removal of H₂S and other undesirable impurities that were affecting the gas quality.

Carbon Activated Europe was contracted to supply and service the replacement filter media. Working with the site operator, we measured performance levels of the incumbent material present alongside Sulfisorb Plus product. The filter system showed a 20% life increase above the previous supplier's standard filter media.

Based on the real-world test evidence, the site operator elected to contract continued replacement filter service and media with Carbon Activated Europe.

Filter Life Improvement



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Landfill Biogas Upgrading Study

Hesse, Germany

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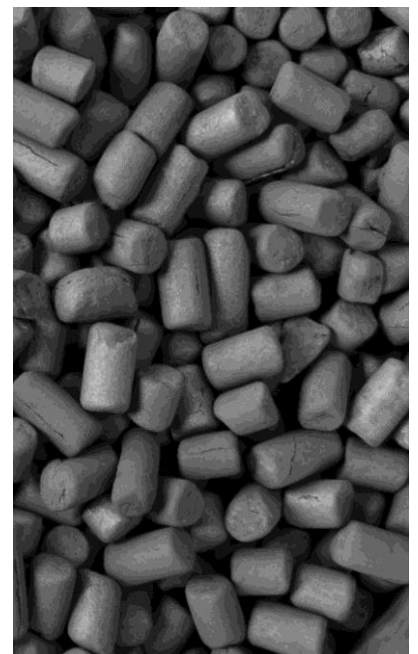
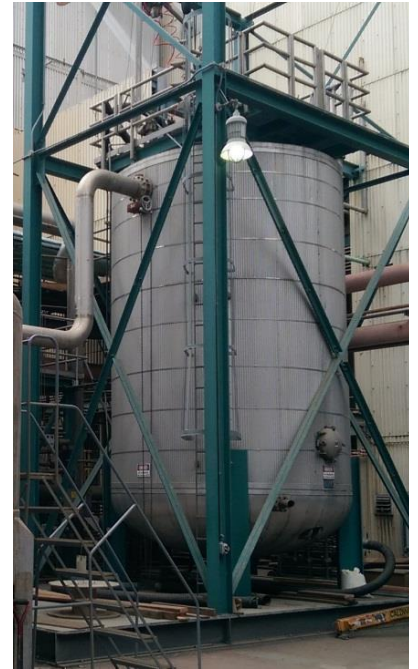
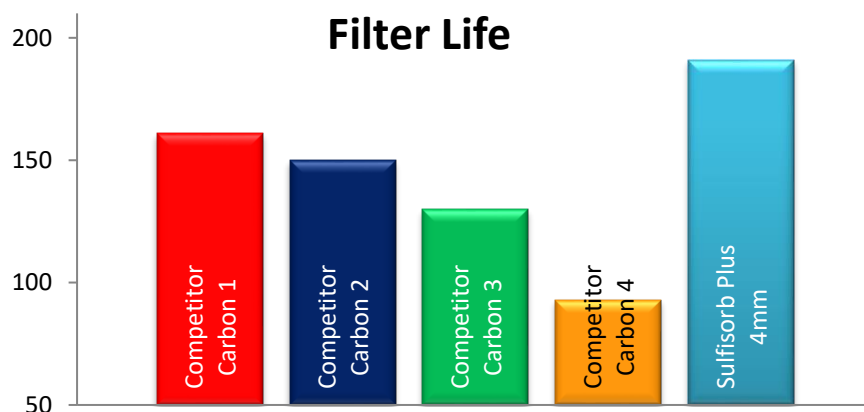
Sulfisorb Plus offers a broad-spectrum treatment solution for elimination of:

- Hydrogen Sulfide (H₂S)
- Volatile Organic Compounds (VOCs)
- Mercaptans
- Siloxanes

The supply of Sulfisorb Plus Activated Carbon to a landfill site in mainland Europe for removal of H₂S, siloxanes and other undesirable impurities that were affecting the gas quality.

Carbon Activated Europe was contracted to supply replacement Activated Carbon for the filter system. In this instance, the operator was actively searching for an economic long-term solution for filter servicing after experiencing a number of cost increases in media and changeout expense. The operator had undertaken a study of activated carbon from various suppliers and determined Carbon Activated Europe’s Sulfisorb Plus to provide a superior cost to life ratio once the lifecycle and replacement costs were considered against market alternatives.

The operator was impressed and upgraded the Activated Carbon at all their European sites to Carbon Activated’s Sulfisorb Plus.



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