



STS Instruments Ltd

# STS Siloxane Monitor

## In-situ, online, simple siloxane monitoring



*The STS Siloxane Monitor*

- *Measurement of total Siloxanes in gas supply to CHP engines*
- *Suitable for Anaerobic Digestion derived Bio Gas and Landfill gases*
- *Constant monitoring once an hour, 24hrs a day 365 days a year*
- *Data logging and remote communications available*
- *Minimal maintenance and operator input*

The STS Siloxane Monitor has, unlike other available units been designed specifically and solely for the analysis of siloxanes in gases supplied to CHP engines. This ground up development has resulted in the instrument being simple to install, run and maintain whilst providing clear and understandable data.



*Siloxane Monitor package housed in GRP Kiosk*

The STS Siloxane Monitor uses a combination of analytical techniques to sample the gas supply and outputs a concentration figure in  $\text{mg/m}^3$ . The instrument will detect siloxane levels down to  $0.5\text{mg/m}^3$  and up to  $400\text{mg/m}^3$ +

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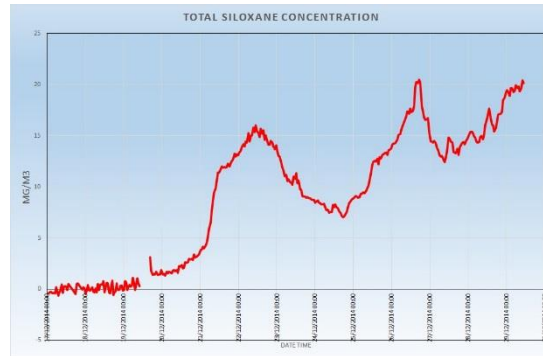
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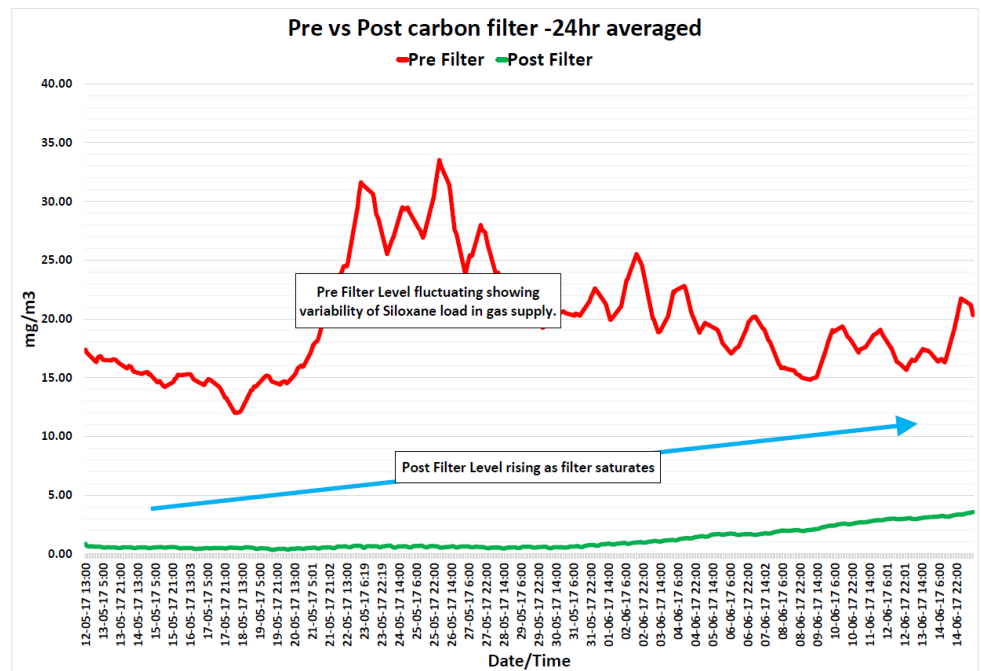
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Carbon filtering is the most common form of siloxane removal and it works very well. Carbon is relatively easy to replace, may be regenerated several times and is readily available.

However, knowing when to change a carbon filter currently relies either on inadequate bag sampling or on historical information of how long a previous filter was deemed to have lasted. The STS Siloxane Monitor therefore fulfils two roles, the identification of the filter's failure as it begins to pass damaging siloxanes to the engine and in potentially extending the life of the filter where breakthrough has not occurred but under a diarised regime the filter would have been prematurely changed.



The cost benefit of online monitoring is very clear, on the one hand extending carbon life means reduced costs and on the other changing the filter at the correct time means preventing damaging siloxanes entering the engine and the resultant cost of replacement heads, plugs and oil.



*Simple understandable Data*

The Siloxane Monitor produces a reading every hour which is logged to the instruments internal memory and also outputted to a SD card.

The data is in a csv file and can therefore be easily converted to an excel graph to show the trend.

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The data is also viewable from the instrument display. A bar chart of the last 200 readings and tables of the last 2000 readings can be quickly accessed for on the spot interpretation and appropriate action.

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### Historical Data

ID#	Conc. (mg/m3)	Date/Time
25-1	0.884	27/11/15 13:14:15
25-2	0.219	27/11/15 13:59:52
25-3	0.626	27/11/15 14:32:56
25-4	0.791	27/11/15 15:12:58

Hold **ENT** to view more Data  
Hold **CLR** to Return

*Example of  
Graph and  
results display*

13:47 27/11/15

### Biogas Sample

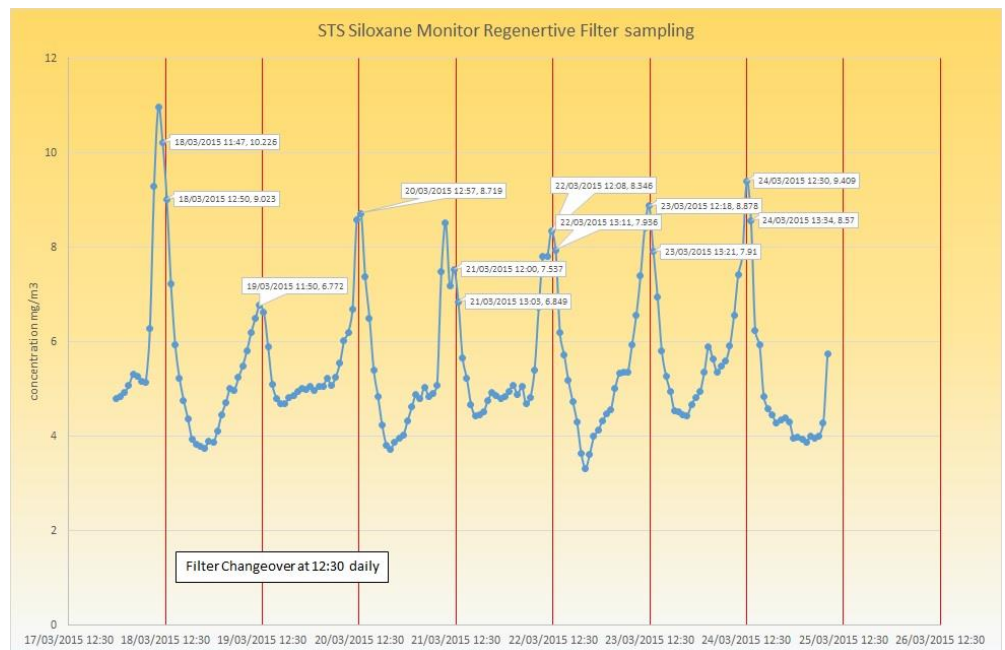
Previous Reading:  
**0.9 mg/m3**

Sampled at: 27/11/15 13:44:15  
Time to next reading: 24:37 minutes

Hold **Data** to View Data  
Hold **Stop** to Stop

The graph below shows an example of the output from a regenerative filter over a week, the daily cycle can be clearly seen as well as the filter efficiency.

*Regenerative  
Filter results  
from AD  
Biogas Trial*



The Siloxane Monitor may be used for the optimisation of regenerative filter regimes ensuring that the maximum capacity of the filters is used before regeneration takes place. Cost efficiencies can therefore be made saving on the frequency of expensive regeneration, the data will also give advance warning of a deterioration of the filter media and therefore less efficient siloxane removal.



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STS offers a full site survey, installation and maintenance/calibration service to UK customers. Overseas customers are handled by our distribution network.

All instruments are manufactured in the UK and supplied with 12 months warranty.



### Technical Specification for the STS – Siloxane Monitor

*The Siloxane Monitor can be used to monitor up to 3 incoming sample lines*

#### Kiosk Package

Fully packaged instrument housed in GRP kiosk with integral ventilation and heating. Gas handling system including water trap, coalescing filters and regulators. Electrical distribution with MCBs to instrument, heater and heated line. Heated line thermostat and armoured line sensor and heated line included in package. Telemetry package for transmission of data via GSM to remote desktop.

#### Instrument Dimensions

Size 475 x 350 x170 mm, Weight 12 Kg

#### Instrument Features

LCD Display 180 x 120 mm, Alphanumeric & Navigation Keypads

Internal Memory data capture of up to 2000 sample records

#### Power Information

The Siloxane Monitor runs from 110V mains power requiring approx. 22A supply.

#### Limit of Detection

0.5mg/m<sup>3</sup> D5 Equivalent up to 400 mg/m<sup>3</sup>

#### Sampling Time

Approx 1 hour cycle between readings

Compare what you currently know about your siloxane loading to what you could know with an online monitor - timely, accurate, understandable, usable data giving you the tools to optimise your plant - to your advantage.

For more information on the STS Siloxane Monitor please visit:

[www.siloxanemonitoring.com](http://www.siloxanemonitoring.com)

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