



GC-IMS-SILOX

Precise on-site Quantification of Siloxanes
in Biogas, Landfill and Digester Gas

The GC-IMS-SILOX is a stand-alone device that has been developed for user-friendly and reliable one-site measurements of siloxanes in biogas, landfill or sewage gas. The device has a straightforward single-click menu and can alternatively be run as online monitoring system testing the gas automatically in user defined intervals. Results of siloxanes, silica (SiO₂) same as silicon ('Total Si') are stored on its flash memory and shown on the 6.4" touchscreen or the 'Total Si' value is transferred via 4–20 mA or MODBUS (TCP).

To run the system it only takes power and nitrogen (cylinder or N₂-generator). Flexible sampling is assured by an integrated pump and a six-port valve to either test from gas sample-bags or as preferred directly from the gas pipe via a by-pass. Condensation water can be trapped by the use of an optional (GENIE-) filter.

GC-IMS-SILOX – KEY FEATURES

- Patented (EP12 816 669.1-1559, US 14/368,669)
- 2-fold separation of GC and IMS
- Manual or automatic operation including data acquisition, analysis, visualisation and export of customized alarms
- Standard ranges available:
Low: Single siloxanes (L2–L5, D3–D5): 0.03–2 mg/m³ and 'Total Si': 0.1–5.0 mg/m³
High: Single siloxanes (L2–L5, D3–D5): 0.1–5 mg/m³* and 'Total Si': 0.4–12 mg/m³
- High reproducibility ($\sigma < 3\%$)
- One-point calibration functionality
- Heating mode (> 100 °C) for cleaning
- Adjustable alarm thresholds

* Not all calibration range are available up to 5 mg/m³

Technical Specification

Separation I: Retention time
Gas chromatograph (GC): Isotherm (< 80 °C)
Capillary Column: 30 m

Separation II: Drift time
Ion Mobility Spectrometer (TOF-IMS)
Ionisation: β -radiation - ³H
Activity: 300 MBq, below the exemption limit of 1 GBq acc. to EURATOM guideline

Detection: Electrometer
Ion Mobility Spectrometer
LoD for siloxanes: one digit ppb
Typical range for siloxanes: 0.03–5.0 mg/m³

Pneumatics: 2 Electronic Pressure Controller (EPC) for flow stability and GC ramping

Sampling: Ambient pressure
Firmware controlled pump plus heated electrical 6-port-valve
Liquid trap (condensation water) optional

Requirement purge gas:
Nitrogen: Quality 5.0 (cylinder or generator)

Operation: Manual: Touch-screen 6.4" TFT
Remote test on-line: User defined intervals

Data Storage (internal): Flash memory 16 GB
Data output: USB, 4–20 mA, MODBUS (TCP)

Temperature: Operation 0–40 °C
Moisture: up to 95 % non condensating

Power range: 100–240 V AC, 50–60 Hz

Power consumption: < 200 Watt

Dimensions: 449x435x177 mm (WxDxH)

Weight: 15.5 kg

Housing: 19", IP20 enclosure, CE Marking