Siloxane Continuous Monitoring System and Laboratory Analysis

Complex and varying gas matrices make siloxanes difficult and expensive to measure. Ohio Lumex offers two options capable of measuring and monitoring various species of siloxanes, including:

1. Laboratory Analysis
2. Siloxane Continuous Monitoring System

Applications

- Landfills
- Gas-to-Energy
- Wastewater Treatment
- Renewable Natural Gas
- Biogas

1. Laboratory Analysis

The Ohio Lumex Analytical Laboratory is a NELAP accredited laboratory focused on three core areas - analysis of gases, liquids and solids, methods development, and consulting for our industry. We offer the fastest turnaround times in the industry with the highest quality and go beyond just analyzing and reporting results by providing continual support and technical expertise.

- Next Day Analysis Results
- Lowest Rates in the Industry
- Pioneers in Siloxane Analysis
  - Tedlar Bags (Biased High)
  - Cylinders (Coated with Inert Compound)
- Sampling Kit
  - Reusable syringe with sample lok and pipe connection
  - Quick and easy to sample
  - Less expensive to ship
  - Shipping container with hermetic seal
- Analysis using GC-MS or GC-AED

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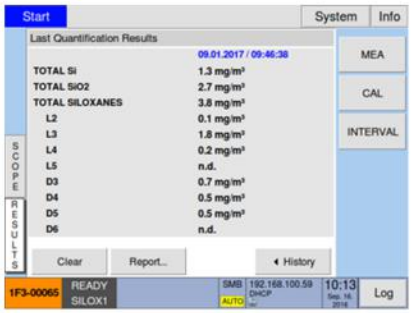
2. Siloxane Continuous Monitoring System

The Ohio Lumex Siloxane Continuous Monitoring System is an independent and fully automated measurement system developed to precisely quantify the concentration of linear siloxanes (L2, L3, L4, and L5), as well as the cyclic siloxanes (D3, D4, D5, and D6) in biogas. The instrument separates compounds in two separate stages, combining the selectivity of a Gas Chromatograph with the extraordinary sensitivity (low ppbv) of an Ion Mobility Spectrometer (IMS).

Key Features

- Two-fold Matrix Separation
  - Gas Chromatograph
  - Ion Mobility Spectrometer (IMS)
- Precise Measurements
- Easy to Operate
- No Analytical Specialist Needed



Ohio Lumex Proprietary Calibration Procedure *Limits of Quantification (LOQ)*	
Species	**Silicon (Si) (mg/m^3)**
(L2) Hexamethyldisiloxane	0.007
(L3) Octamethyltrisiloxane	0.007
(L4) Decamethyltetrasiloxane	0.007
(D3) Hexamethylcyclotrisiloxane	0.008
(D4) Octamethylcyclotetrasiloxane	0.008
(D5) Decamethylcyclopentasiloxane	0.008
(L5) Dodecamethylpentasiloxane	0.037
(D6) Dodecamethylcyclohexasiloxane	0.038

Technical Specifications			
Separation I	GC Retention Time	**Purge Gas Requirement**	Nitrogen: Quality 5.0 (cylinder or generator)
Gas Chromatograph (GC)	Isotherm (< 80° C)	**Operation**	Manual: 6.4" TFT touchscreen Online Remote Test: User defined intervals
Capillary Column	30m	**Data Storage (Internal)**	16 GB Flash Memory
Separation II	Drift Time Ion Mobility Spectrometer (TOF-IMS)	**Data Output**	USB, 4-20mA, MODBUS (TCP)
Ionization	β-radiation - ^3H	**Ambient Temperature**	Operation 0 - 40° C
Activity	300 MBq, below the exemption limit of 1 GBq acc. to EURATOM guideline	**Moisture**	Up to 95% non-condensing
Detection	Electrometer, Ion Mobility Spectrometer	**Power Range**	100 -240 V AC, 50 - 60 Hz
LoD for Siloxanes	One digit ppb	**Power Consumption**	< 200 Watt
Typical Range for Siloxanes	0 - 1.5 mg/m^3	**Weight**	34 lbs (15.5 kg)
Pneumatics	Two Electronic Pressure Controllers (EPC) for flow stability and GC ramping	**Dimensions**	17.7 x 17.1 x 7 in (No Case) 449 x 435 x 177 mm (No Case)
Sampling	Ambient pressure, Firmware controlled pump plus heated electrical six port valve, Liquid trap (water condensation) optional	**Housing**	19:, IP 20 Enclosure, CE Marking

GC-IMS Supplied By:

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