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Analysis of natural gas — Silicon content of biomethane —

Part 2: Determination of siloxane content by gas chromatography with ion mobility spectrometry

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Foreword

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Introduction

This document describes a method for the determination of the siloxane content of biomethane that is applicable to both laboratory and online analyses.

Siloxanes are a common contaminant in biogas, caused by their extensive use in common household products such as cosmetics and detergents. These products eventually become entrained in waste streams that are used to generate biogas. Additionally, siloxanes are sometimes added to digesters as anti-foaming agents to improve generation efficiency.

If not effectively removed, siloxanes can cause damage to gas processing and vehicle injection equipment through formation of silica deposits at high temperatures. Many gas distributors require measurement reports to demonstrate that the resultant biomethane conforms with their requirements, which typically includes siloxane content due to its potential to cause damage. Additionally, producers may wish to monitor siloxane content for process optimisation purposes.

The technique described in this document is commercially available and tailored specifically to measuring siloxanes within biomethane at low concentrations (for instance, as specified in EN 16723-1^[11] and EN 16723-2^[12]). It is suitable for use both in the laboratory and field.

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