SLOVENSKI STANDARD
SIST EN ISO 2613-1:2023

01-julij-2023

Analiza zemeljskega plina - Vsebnost silicija v biometanu - 1. del: Določevanje celotnega silicija z atomsko emisijsko spektroskopijo (AES) (ISO 2613-1:2023)

Analysis of natural gas - Silicon content of biomethane - Part 1: Determination of total silicon by atomic emission spectroscopy (AES) (ISO 2613-1:2023)

Analyse von Erdgas - Siliziumgehalt von Biomethan - Teil 1: Bestimmung des Gesamtsiliziumgehalts durch AES (ISO 2613-1:2023)

Analyse du gaz naturel - Teneur en silicium du biométhane - Partie 1: Détermination de la teneur totale en silicium par spectrométrie d'émission atomique (SEA) (ISO 2613-1:2023)

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ICS:

75.060	Zemeljski plin	Natural gas

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EUROPEAN STANDARD

NORME EUROPÉENNE

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Analysis of natural gas - Silicon content of biomethane - Part 1: Determination of total silicon by atomic emission spectroscopy (AES) (ISO 2613-1:2023)

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European foreword

This document (EN ISO 2613-1:2023) has been prepared by Technical Committee ISO/TC 193 "Natural gas" in collaboration with Technical Committee CEN/TC 408 “Natural gas and biomethane for use in transport and biomethane for injection in the natural gas grid” the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2023, and conflicting national standards shall be withdrawn at the latest by November 2023.

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INTERNATIONAL STANDARD

ISO 2613-1

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Part 1: Determination of total silicon by atomic emission spectroscopy (AES)

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Introduction

This document describes a method for the measurement of the total concentration of silicon in biomethane, biogas and similar gaseous matrices when used in the natural gas grids and when using it as a transport fuel. The method is based on using a liquid impinger to accumulate the silicon from a gas sample, followed by instrumental analysis.

Due to the extensive usage of siloxane compounds, their volatility and great affinity to apolar environments, siloxanes are considered as one of the most important impurities in biogas. They are undesired because of their potential for abrasive SiO_2 formation as combustion product that can damage engines and appliances. Furthermore, some of these compounds present a health risk.

For the purpose of this document, silicon species measured is quoted as total silicon. Silicon measured is from organosilicon species that are trapped from the gas phase in liquid media and derivatized into analytical form of hexafluorosilicate (SiF_6^{2-}) ions which remain present in solution when analysed.

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