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Proposed limit values for contaminants in biomethane based on health assessment criteria

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National foreword

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English Version

Proposed limit values for contaminants in biomethane based on health assessment criteria

Valeurs limites proposées pour les contaminants dans le biométhane sur la base de critères d'évaluation de la santé

Vorgeschlagene Grenzwerte für Verunreinigungen in Biomethan auf Grundlage von Gesundheitsgefährdungskriterien

This Technical Report was approved by CEN on 9 April 2018. It has been drawn up by the Technical Committee CEN/TC 408.

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European foreword

This document (CEN/TR 17238:2018) has been prepared by 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

Introduction

This standard was prepared by CEN/TC 408 in response to the European Commission standardization mandate M/475.

The Mandate asks for the development of a set of quality specifications for biomethane to be used as a fuel for vehicle engines and to be injected in natural gas pipelines (network).

However, the scope of the standard was widened according to BT decision C109/2012 that redefined the scope of CEN/TC 408: "Standardization of specifications for natural gas and biomethane as vehicle fuel and of biomethane for injection in the natural gas grid, including any necessary related methods of analysis and testing. Production process, source and the origin of the source are excluded".

One of the aims of European policy in the field of energy is to increase the security of energy supply in the EU as well as to contribute to reduce the emission of greenhouse gases accepted by the EU at Kyoto. In this context a special focus is given to the development and use of energy from renewable sources.

Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC stipulates clear aims regarding the percentage of renewables in EU energy consumption and states the related need to support the integration of energy from renewable sources into the energy networks including the establishment of appropriate technical rules in line with Directive 2003/55/EC (Article 6) replaced by 2009/73/EC (Article 8) for the realization of the competitive single European Gas Market and the technical interoperability of gas networks, (network connection, gas quality, gas odorization and gas pressure requirements).

Supporting the EU policy and therefore the maximization of the production and use of biomethane and considering the absence of standards the European Commission DG ENER has included the injection of biomethane in natural gas pipelines in Mandate M/475. Biomethane in this context can be produced from biological (fermentation, digestion …) and thermochemical processes and it is essential that it is appropriate to be used as a blending component to natural gas.

1 Scope

This document explains an approach for assessment of limit values for contaminants that may be found in biomethane. Limit values are generally required as an adjunct to a biomethane specification (such as parts 1 and 2 of EN 16723, or an equivalent National specification) or as part of a Network Entry Agreement for injection of biomethane into gas networks.

The methodology employed will permit derivation of limit values based solely on consideration of potential for impact on human health and does not consider other impacts, such as integrity and operation of plant and pipelines used to convey biomethane or appliances involved in its combustion or other regulations like CLP regulation. Where consideration of such impacts would result in proposing lower limit values than those based on health impacts, then the lowest limit values should generally be proposed.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16723-1:2016, *Natural gas and biomethane for use in transport and biomethane for injection in the natural gas network — Part 1: Specifications for biomethane for injection in the natural gas network*

EN 16723-2:2017, *Natural gas and biomethane for use in transport and biomethane for injection in the natural gas network — Part 2: Automotive fuels specification*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
biogas
gas, comprising principally methane and carbon dioxide, obtained from the anaerobic digestion of biomass

3.2
biomass
biological material from living, or recently living organisms, typically this may be plants or plant-derived materials

3.3
biomethane
gas comprising principally methane, obtained from either upgrading of biogas or methanation of bio-syngas

3.4
bio-syngas
gas, comprising principally carbon monoxide and hydrogen, obtained from gasification of biomass