SIST

SLOVENSKI STANDARD
SIST EN ISO 21258:2010

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Emisije nepremičnih virov - Določevanje masne koncentracije didušikovega monoksida (N2O) - Referenčna metoda: nedisperzivna infrardeča metoda (ISO 21258:2010)

Stationary source emissions - Determination of the mass concentration of dinitrogen monoxide (N2O) - Reference method: Non-dispersive infrared method (ISO 21258:2010)

Emissionen aus stationären Quellen - Bestimmung der Massenkonzentration von Distickstoffmonoxid (N2O) - Referenzverfahren: Nicht-dispersives Infrarot-Verfahren (ISO 21258:2010)

Émissions de sources fixes - Détermination de la concentration massique de protoxyde d'azote (N2O) - Méthode de référence: Méthode infrarouge non dispersive (ISO 21258:2010)

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Stationary source emissions - Determination of the mass concentration of dinitrogen monoxide (N2O) - Reference method: Non-dispersive infrared method (ISO 21258:2010)

Émissions de sources fixes - Détermination de la concentration massique de protoxyde d'azote (N2O) - Méthode de référence: Méthode infrarouge non dispersive (ISO 21258:2010)

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Foreword

This document (EN ISO 21258:2010) has been prepared by Technical Committee ISO/TC 146 "Air quality" in collaboration with Technical Committee CEN/TC 264 “Air quality” the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by December 2010, and conflicting national standards shall be withdrawn at the latest by December 2010.

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Stationary source emissions — Determination of the mass concentration of dinitrogen monoxide (N_2O) — Reference method: Non-dispersive infrared method

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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ISO 21258 was prepared by Technical Committee ISO/TC 146, *Air quality*, Subcommittee SC 1, *Stationary source emissions*.

Introduction

Dinitrogen monoxide (N_2O, also known as nitrous oxide) is an important greenhouse gas with a global warming potential 310 times that of carbon dioxide (CO_2). N_2O is of both natural and anthropogenic origin. Increased emissions of N_2O have been observed, for example, in the exhaust gas of combustion processes using nitrogenous fuels at temperatures below 900 °C, and in the reduction of NO_x using the selective non-catalytic reduction (SNCR) process, in particular when urea is used. There is considerable uncertainty over current N_2O emissions, which is reflected in the wide range of emission factors cited. The largest uncertainties are for emissions from natural and agricultural sources, which are difficult to measure accurately. In the past, emissions from stationary sources such as coal-fired plants and industry were overestimated due to a serious artefact in the grab-sampling methodology used to measure emissions. N_2O is involved in the EU emission trading scheme along with CO_2 and methane (CH_4).

Improved measurement techniques are helping to reduce uncertainties in emission estimates. Improved measurement techniques are also a prerequisite for accurate information on N_2O and its potential role in the enhanced greenhouse effect.

Stationary source emissions — Determination of the mass concentration of dinitrogen monoxide (N_2O) — Reference method: Non-dispersive infrared method

1 Scope

This International Standard specifies a method for sampling, sample conditioning and determination of dinitrogen monoxide (N_2O) content in the flue gas emitted from ducts and stacks to atmosphere. It sets out the non-dispersive infrared (NDIR) analytical technique, including the sampling system and sample gas conditioning system.

This International Standard is a reference method for periodic monitoring and for calibration, adjustment or control of automatic monitoring systems permanently installed on a stack.

This reference method has been successfully tested on a sewage sludge incinerator where the N_2O concentration in the flue gas was up to about 200 mg/m^3.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 9169:2006, *Air quality — Definition and determination of performance characteristics of an automatic measuring system*

ISO 14956, *Air quality — Evaluation of the suitability of a measurement procedure by comparison with a required measurement uncertainty*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement* (*GUM:1995*)

3 Terms and definitions

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

3.1
influence quantity
quantity that is not the measurand but that affects the result of the measurement

[ISO/IEC Guide 98-3:2008, B.2.10]

3.2
interference
negative or positive effect upon the response of the measuring system, due to a component of the sample that is not the measurand