

Fugitive and diffuse emissions of common concern to industry sectors - Measurement of fugitive emission of vapours generating from equipment and piping leaks

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<p>Käesolev Eesti standard EVS-EN 15446:2008 sisaldab Euroopa standardi EN 15446:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 25.03.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 23.01.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 15446:2008 consists of the English text of the European standard EN 15446:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 25.03.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 23.01.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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ICS 13.040.40

English Version

**Fugitive and diffuse emissions of common concern to industry
sectors - Measurement of fugitive emission of vapours
generating from equipment and piping leaks**

Emissions fugitives et diffuses concernant les secteurs
industriels - Mesurage des émissions fugitives de
composés gazeux provenant d'équipements et de
canalisations

Fugitive und diffuse Emissionen von allgemeinem Interesse
für Industriebereiche - Messung fugitiver Emissionen von
Gasen und Dämpfen aus Lecks von Betriebseinrichtungen
und Rohrleitungen

This European Standard was approved by CEN on 30 November 2007.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Measurement equipment	6
5 Chemicals / Calibration gases	7
6 Procedures	8
7 Precision	11
8 Report	12
Annex A (normative) Evaluation procedure of instrument performance parameters	13
Annex B (normative) Calculation of response factor for mixtures	14
Annex C (normative) Correlation between screening values and emission rates	15
Bibliography	17

Foreword

This document (EN 15446:2008) has been prepared by 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 July 2008, and conflicting national standards shall be withdrawn at the latest by July 2008.

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

This European Standard has been elaborated under a mandate of the European Commission/DG Enterprise to support essential requirements of the IPPC Directive (96/61/EC).

The horizontal approach of common concern to industrial sectors is to gather industries concerned with diffuse/fugitive emissions and to develop methods suiting their needs. The industries of three trade associations have participated: EUROFER, EUROMETAUX and CEFIC. For practical reasons the two developed measurement methods, one for dusts and the other for gases are published as two separate standards.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

A portable instrument is used to detect VOC leaks from individual sources. Any detector type is allowed, provided it meets the specifications and performance criteria contained in Clause 5. This procedure is intended to locate the leaks, and to estimate the mass emission rate from individual sources and the total emission of the industrial facility over a reporting period by using:

- EPA or user-defined correlations whenever possible;
- fixed emission factors, in all other cases.

1 Scope

This standard applies to the measurement of fugitive emissions of volatile organic compounds (VOCs) from process equipment. The leak sources include, but are not limited to, valves, flanges and other connections, pressure relief devices, process drains, open-ended valves, pump and compressor seal systems, agitator seals, and access door seals. It does not apply to instrument tubing connections.

This standard applies to all products of which at least 20 % by weight has a vapour pressure higher than 0,3 kPa at 20 °C. For the petroleum industry, this includes all light products and excludes kerosene and all heavier products.

The standard is based on the measurement of the gas concentration at the interface of a leak. This concentration is measured with a portable instrument. It is converted to a mass emission rate by use of a set of correlations. The scope of this standard includes the complete data processing, from the initial concentration measurement up to the generation of an emission report over a reporting period (which is generally one year)¹).

This standard does not prescribe the number of potential emission points that should be screened each year nor the frequency at which these points should be screened. This sampling strategy shall indeed take into account the plant characteristics and the required level of control over fugitive emissions.

Optical methods are currently under development to ease the detection of leaks in plants and use of this standard in conjunction with these methods might be possible. In any case, measurements have to be performed according to the requirements of this standard. To enable direct quantification of total fugitive emissions based only on these methods, a subsequent revision of this standard will be needed.

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 5725-2, *Accuracy (trueness and precision) of measurement methods and results - Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method (ISO 5725-2:1994 including Technical Corrigendum 1:2002)*

3 Terms and definitions

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

3.1

fugitive emission

emission to the atmosphere caused by loss of tightness of an item which is designed to be tight

3.2

screening

action of measuring the concentration in VOC at the interface of a potential leak source

3.3

screening Value

local VOC concentration at the surface of a leak source that indicates a VOC emission is present

¹) The standard aims at significantly improving the consistency of emissions reporting, however determination of the trueness of the method is not in the current scope of the TWG.