



NSAI
Standards

Irish Standard
I.S. EN 13999-2:2013

Adhesives - Short term method for measuring the emission properties of low-solvent or solvent-free adhesives after application - Part 2: Determination of volatile organic compounds

I.S. EN 13999-2:2013

Incorporating amendments/corrigenda/National Annexes issued since publication:

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EUROPEAN STANDARD

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Supersedes EN 13999-2:2007

English Version

**Adhesives - Short term method for measuring the emission
properties of low-solvent or solvent-free adhesives after
application - Part 2: Determination of volatile organic compounds**

Adhésifs - Méthode de mesurage rapide des
caractéristiques émissives des adhésifs à teneur faible ou
nulle en solvants après application - Partie 2: Dosage des
composés organiques volatils

Klebstoffe - Kurzzeit-Verfahren zum Messen der
Emissionseigenschaften von lösemittelarmen oder
lösemittelfreien Klebstoffen nach der Applikation - Teil 2:
Bestimmung flüchtiger organischer Verbindungen

This European Standard was approved by CEN on 19 October 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 13999-2:2013) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by AENOR.

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of an identical text or by endorsement, at the latest by June 2014, and conflicting national standards shall be withdrawn at the latest by June 2014.

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 document supersedes EN 13999-2:2007.

EN 13999-2:2013 includes the following significant technical changes with respect to EN 13999-2:2007:

- a) change in the calculation of total VOC;
- b) harmonization of the testing conditions to EN ISO 16000-9.

EN 13999, under the general title *Adhesives — Short-term method for measuring the emission properties of low-solvent or solvent-free adhesives after application*, consists of the following parts:

- *Part 1: General procedure*
- *Part 2: Determination of volatile organic compounds*
- *Part 3: Determination of volatile aldehydes*
- *Part 4: Determination of volatile diisocyanates*

SAFETY STATEMENT — Persons using this document should be familiar with the normal laboratory practice, if applicable. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any regulatory conditions.

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EN 13999-2:2013 (E)**1 Scope**

This European Standard specifies a method for the determination of single volatile organic compounds (VOC) and of the total amount of volatile organic compounds (TVOC_{EN 13999}) in the exhaust air of an emission test chamber after application of a low-solvent or solvent-free adhesive as defined in EN 923:2005+A1:2008. The method is based on use of a solid sorbent with subsequent desorption and gas chromatographic analysis. The method is applicable to measurement of non-polar and slightly polar VOC.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1232, *Workplace atmospheres - Pumps for personal sampling of chemical agents - Requirements and test methods*

EN 13999-1, *Adhesives - Short term method for measuring the emission properties of low-solvent or solvent-free adhesives after application - Part 1: General procedure*

EN ISO 16000-9, *Indoor air - Part 9: Determination of the emission of volatile organic compounds from building products and furnishing - Emission test chamber method (ISO 16000-9)*

EN ISO 16017-1, *Indoor, ambient and workplace air - Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography - Part 1: Pumped sampling (ISO 16017-1)*

ISO 16000-6, *Indoor air - Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA® sorbent, thermal desorption and gas chromatography using MS or MS-FID*

3 Principle

A sufficient volume of test chamber air is drawn with an appropriate flow through a sorbent tube (or several tubes in series) containing a solid sorbent.

Volatile organic compounds (VOC) are retained by the sorbent tube, which is subsequently analysed in the laboratory. The VOC are desorbed from the sampling tube and transferred by a flow of inert carrier gas into a capillary gas chromatograph coupled to a mass spectrometric detector (MS) and to a flame ionisation detector (FID) or only to a mass spectrometric detector.

4 Reagents and materials**4.1 Volatile organic compounds for calibration**

Compounds of gas chromatographic grade.

4.2 Methanol

Methanol of gas chromatographic grade.

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