

This is a preview of "ISO 12219-5:2014". [Click here to purchase the full version from the ANSI store.](#)

First edition
2014-05-15

Interior air of road vehicles —

Part 5:

Screening method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials — Static chamber method

Air intérieur des véhicules routiers —

*Partie 5: Méthode de criblage pour la détermination des émissions de
composés organiques volatils des parties et matériaux intérieurs des
véhicules — Méthode de la chambre statique*



Reference number
ISO 12219-5:2014(E)

© ISO 2014

This is a preview of "ISO 12219-5:2014". Click [here](#) to purchase the full version from the ANSI store.



COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

This is a preview of "ISO 12219-5:2014". Click here to purchase the full version from the ANSI store.

Contents

| | Page |
|--|-----------|
| Foreword | v |
| Introduction | vi |
| 1 Scope | 1 |
| 2 Normative references | 1 |
| 3 Terms and definitions | 2 |
| 4 Principle | 3 |
| 5 Instrument and reagent | 3 |
| 5.1 General..... | 3 |
| 5.2 Test chamber..... | 4 |
| 5.3 Clean air..... | 4 |
| 5.4 Buffer bag..... | 4 |
| 5.5 Non-emitting cover..... | 4 |
| 5.6 Vapour sampling devices..... | 5 |
| 6 Unit component sample preparation | 5 |
| 6.1 General..... | 5 |
| 6.2 History of the unit component..... | 5 |
| 6.3 Packaging, transport and storage of the unit component..... | 5 |
| 6.4 Preparation of unit component specimens..... | 6 |
| 7 Verification of test conditions | 6 |
| 7.1 Test temperature..... | 6 |
| 7.2 Recovery..... | 6 |
| 7.3 Clean air..... | 6 |
| 7.4 Background concentration levels..... | 6 |
| 7.5 Airtightness..... | 7 |
| 8 Standard test procedure | 7 |
| 8.1 General..... | 7 |
| 8.2 Cleaning..... | 8 |
| 8.3 Test..... | 8 |
| 8.4 Vapour sample collection..... | 9 |
| 8.5 Sealing the vapour sampling devices after vapour sample collection..... | 9 |
| 8.6 Sample analysis..... | 10 |
| 9 Calculation of unit component values | 10 |
| 10 Test report | 10 |
| 11 Quality assurance/quality control (QA/QC) | 11 |
| 12 Safety measures | 12 |
| Annex A (informative) General description of the static test chamber | 13 |
| Annex B (informative) Example of airtightness test and temperature stability of entire phases | 14 |
| Annex C (informative) Comparison of VOCs concentration between the buffer bag inside and the static chamber inside | 16 |
| Annex D (informative) A dynamic mode operation | 17 |
| Annex E (informative) Comparison of the static mode and the dynamic mode operation | 19 |
| Annex F (informative) Correlation between the assembly-based method (ISO 12219-4) and the unit component-based method (ISO 12219-5) | 20 |
| Annex G (informative) Correlation between the unit component-based method (ISO 12219-5) and the material-base method (ISO 12219-3) | 22 |

This is a preview of "ISO 12219-5:2014". [Click here to purchase the full version from the ANSI store.](#)

| | |
|---------------------------|-----------|
| Bibliography | 24 |
|---------------------------|-----------|

This is a preview of "ISO 12219-5:2014". [Click here to purchase the full version from the ANSI store.](#)

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 146, *Air quality*, Subcommittee SC 6, *Indoor air*.

ISO 12219 consists of the following parts, under the general title *Interior air of road vehicles*:

- *Part 1: Whole vehicle test chamber — Specification and method for the determination of volatile organic compounds in cabin interiors*
- *Part 2: Screening method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials — Bag method*
- *Part 3 Screening method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials — Micro-scale chamber method*
- *Part 4: Method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials — Small chamber method*
- *Part 5: Screening method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials — Static chamber method*

Introduction

Volatile organic compounds (VOCs) are widely used in industry and may be emitted by many everyday products and materials. They have attracted attention in recent years because of their impact on indoor air quality. After homes and workplaces, people spend a lot of time in their vehicles. Therefore there is a need for comprehensive and reliable information about the types of organic compounds in the interior air of vehicles and also their concentrations. As part of measures to achieve acceptable indoor air quality it is important to determine the material emissions of interior parts and to reduce them, if necessary, to an acceptable level.

Measuring VOCs from vehicle interior trim components can be performed in several ways and the approach selected depends upon the desired outcome and the material type. Complete assembly-based measurements^[1,5] provide total emission results only, but cannot provide VOCs emission of each constituent component. Rapid screening methods obtain VOCs emission data for cut components.^[2,3,6,7] Therefore, VOCs emission data for constituent unit component of car interior trim is required for reducing VOCs level in vehicles.

This part of ISO 12219 outlines a method of measuring the types and levels of chemicals emitted by unit component-based car interior trim using a static chamber method based on the principles of static headspace. Static chamber methods can provide diffusion data from unit components of vehicle interior trim without emission from cutting planes. It can be used to verify the correlation between a material-based method and an assembly-based method. Adjunctively, the static headspace chamber method is simply modified to the dynamic headspace mode to obtain complementary information by connecting of a supply of air for comparison.

Each measurement method such as bag^[2] / micro-scale chamber^[3] / small-chamber^[1] sampling offers a complementary approach.

ISO 16000-3, ISO 16000-5, ISO 16000-6, ISO 16000-9, ISO 16000-10, ISO 16000-11, ISO 16000-24, and ISO 16000-25 also focus on VOC and formaldehyde measurements. ISO 16017-1 and ISO 16017-2 focus on VOC measurements.