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Interior air of road vehicles —

Part 8: Handling and packaging of materials and components for emission testing

Air intérieur des véhicules routiers —

Partie 8: Manutention et emballage des matériaux et des composants pour les essais d'émissions

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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.

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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www. iso .org/iso/foreword. html.

This document was prepared by Technical Committee ISO/TC 146, *Air quality*, Subcommittee SC 6, *Indoor air*.

A list of all parts in the ISO 12219 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

Volatile and semi-volatile organic compounds (VOCs and SVOCs) are widely used in industry and can 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, the other place people spend a lot of time is in their vehicles. Therefore, it is important to determine the material emissions of interior parts of vehicles and to reduce them to an acceptable level. To do so, it is necessary to get comprehensive and reliable information about the types of organic compounds in the indoor air of vehicles and their concentrations. Since contamination of the materials and/or rapid volatilization of emissions can influence the results of the measurements, it is necessary to know these effects to achieve repeatable and accurate test results.

This document describes the handing and packaging of materials and components for emission testing. It is intended to be used by producers and testing laboratories in the automotive industry.

This document supports the vehicle product development cycle since vehicle interior materials change frequently. Testing methods can specifically define the handling and packaging conditions for the material to be analysed. In these cases, the method is followed as closely as possible. This document can be used as a guide for when the protocol for handling and packaging the samples between part production and testing is not exactly defined.

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Interior air of road vehicles —

Part 8:
Handling and packaging of materials and components for emission testing

1 Scope

This document specifies the selection, preparation, conditioning, packaging, labelling, transportation and storage for materials and components for, but not limited to, volatile organic compound (VOC) testing, fogging testing and odour testing.

It pays special attention to materials sensitive to contamination and/or rapid volatilization of emissions in order to achieve repeatable and accurate test results.

2 Normative references

There are no normative references in this document.

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:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
analytical sample
emissions sample that is taken during the emissions test procedure

Note 1 to entry: When determining volatile organic compound emissions, typical air samples are taken at selected times during the test procedure. Other methods, such as fogging or odour, may produce results without the need for analytical samples and post analysis. Two other terms used with “analytical sample” are “background sample” and “blank sample”. Both terms are used to ensure accurate measurements, see ISO 16000-6 and ISO 16000-3 for more details.

3.2
liquid material
material that arrives at the vehicle assembly line in a liquid form and does not fully solidify

EXAMPLE Sealers and adhesives.

3.3
producer
company and manufacturing plant that makes and supplies the product to be tested

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3.4
product sample
basic material of the vehicle interior component or complete component being assembled in the vehicle interior (sometimes referred to as a field sample)

Note 1 to entry: The product sample is representative of the production component or a representative sample of material cut out from vehicle interior parts to be tested. The product samples should have been put through all of the steps of production intended for the production process and with all of the pertinent auxiliary production equipment, including the proper production rate. Deviations shall be documented in precise detail in the test report. Product samples should be selected at random.

3.5
production cycle
processing of raw products and materials from the beginning of manufacturing through the output of a finished product

Note 1 to entry: In addition to the processing time, the production cycle includes normal drying times and the period up to the point where the product is packaged and shipped, prior to leaving the control of the product manufacturer.

3.6
test laboratory
analytical facility

Note 1 to entry: This is where the material product is sent for testing. The *test specimens* (3.8) and *analytical samples* (3.1) are created here. The analytical samples are also analysed by the test laboratory even though the sampling test may not take place at the same location as the samples are analysed.

3.7
test requester
client of the *test laboratory* (3.6)

Note 1 to entry: In automotive scenarios, this is typically the original equipment manufacturer (OEM) or Tier 1 supplier but it could be anyone requesting a material or component to be tested.

3.8
test specimen
part of the product sample specifically prepared for testing

Note 1 to entry: The test specimen is prepared, stored and conditioned by experienced laboratory personnel in order to simulate the emission behaviour of the material or component that is tested.

4 Simplified process overview and timeline

4.1 The complete process is simplified and summarized for the benefit of producers and testing laboratories. In every case, great care should be used when sealing and packaging the test specimens to halt off-gassing and to preserve the VOC emissions. Also, each product or specimen sent for testing shall include a complete and accurate label. Follow all the specific instructions described by the test request.

4.2 Time is a very critical parameter. VOC emissions rates are very sensitive to time and exposure conditions. The times listed are suggestions. Timing should be agreed by the producer, testing laboratory and the test requester as per the test method and the material or part specification. The testing laboratory typically requires two weeks to test the specimen(s). Specific aging time shall be specified by the test requester and documented by the producer and testing laboratory. The testing laboratory could then require an additional two weeks to analyse the collected test sample(s) and to send the final test report

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