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BSI Standards Publication

Road vehicles — Aerosol separator performance test for internal combustion engines

Part 2: Laboratory test method

bsi.

National foreword

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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).

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 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 34, *Propulsion, powertrain and powertrain fluids*.

A list of all parts in the ISO 17536 series can be found on the ISO website.

Introduction

The engine crankcase blowby is composed of combustion exhaust gases which have escaped to the crankcase via piston ring seals and lube oil aerosols generated by thermal and mechanical action within the engine. These gases are vented from the crankcase to prevent a build-up of high pressure. The constituents of vented engine blowby gases are recognized as an undesirable contaminant and technology for their containment is therefore evolving.

The device, used to separate oil aerosols from the blowby, typically releases cleaned gases to the atmosphere or alternatively returns the cleaned product to the combustion process by feeding into the engine air intake prior to the turbo compressor (if present). The latter has led to the requirement for a pressure control device to isolate the engine crankcase from air intake pressure.

It is the purpose of this document to define standardized and repeatable test procedures for the evaluation of blowby oil aerosol separators and filtering devices using this laboratory gravimetric test method.

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Road vehicles — Aerosol separator performance test for internal combustion engines —

Part 2: Laboratory test method

1 Scope

This document defines standardized and repeatable test procedures for the evaluation of blowby oil aerosol separators and filtering devices and specifies laboratory gravimetric separation efficiency and system pressure tests in both open and closed crankcase ventilation systems. This document has a limitation of 0 % to 99 % for aerosol gravimetric efficiency.

NOTE Gravimetric efficiencies >99 % may be difficult to measure due to long test durations and absolute filter weight measurements.

Filter life is not evaluated in this document.

This test method only applies to devices that have a defined tubular inlet, outlet and drain that can be connected to the test equipment. For devices that lack such connections, for example, one that is built into a valve cover, see Annex A.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 17536-1:2015, *Road vehicles — Aerosol separator performance test for internal combustion engines — Part 1: General*

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:

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

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

3.1
standard flow
flow rate corrected to standard conditions

Note 1 to entry: See 5.3 for details.

4 Measurement accuracy

The measurement accuracy of this document shall be in accordance with ISO 17536-1:2015, Clause 3.