INTERNATIONAL STANDARD

ISO 11338-1

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Stationary source emissions — Determination of gas and particle-phase polycyclic aromatic hydrocarbons —

Part 1: **Sampling**

Émissions de sources fixes — Détermination sous forme gazeuse et particulaire des hydrocarbures aromatiques polycycliques —

Partie 1: Échantillonnage

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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

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 11338-1 was prepared by Technical Committee ISO/TC 146, *Air quality*, Subcommittee SC 1, *Stationary source emissions*.

ISO 11338 consists of the following parts, under the general title *Stationary source emissions — Determination of gas and particle-phase polycyclic aromatic hydrocarbons*:

— *Part 1: Sampling*

— *Part 2: Sample preparation, clean-up and determination*

Introduction

Polycyclic aromatic hydrocarbons (PAHs) are a group of aromatic hydrocarbons, some members of which are probable and others possible human carcinogens. Human exposure to PAHs can occur via food, soil, water, air and skin contact with materials containing PAHs. While PAH are formed in natural processes (e.g. forest fires), man-made atmospheric emissions of these compounds originate from the combustion of coal, gas, wood and oil, from a range of industrial processes such as coke production, aluminium smelting and from vehicles.

The quantification of atmospheric releases of PAH from stationary sources is an important part of the environmental impact assessment of certain industrial processes.

Stationary source emissions — Determination of gas and particle-phase polycyclic aromatic hydrocarbons —

Part 1: Sampling

1 Scope

This part of ISO 11338 describes methods for the determination of the mass concentration of polycyclic aromatic hydrocarbons (PAHs) in flue gas emissions from stationary sources such as aluminium smelters, coke works, waste incinerators, power stations, and industrial and domestic combustion appliances.

This part of ISO 11338 describes three sampling methods, which are here regarded as of equivalent value, and specifies the minimum requirements for effective PAH sampling. The three sampling methods are the dilution method (A), the heated filter/condenser/adsorber method (B) and the cooled probe/adsorber method (C). All three methods are based on representative isokinetic sampling, as the PAHs are commonly associated with particles in flue gas.

Information is provided to assist in the choice of the appropriate sampling method for the measurement application under consideration.

This part of ISO 11338 is not applicable to the sampling of fugitive releases of PAHs.

NOTE Methods for sample preparation, clean-up and analysis are described in ISO 11338-2 and are intended to be combined with one of the sampling methods described in this part of ISO 11338 to complete the whole measurement procedure.

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 4225:1994, *Air quality — General aspects — Vocabulary*

ISO 9096:1992, *Stationary source emissions — Determination of concentration and mass flow rate of particulate material in gas-carrying ducts — Manual gravimetric method*

ISO 12141, *Stationary source emissions — Determination of mass concentration of particulate matter (dust) at low concentrations — Manual gravimetric method*