INTERNATIONAL STANDARD

ISO 10396

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Stationary source emissions — Sampling for the automated determination of gas concentrations

Émissions de sources fixes — Échantillonnage pour la détermination automatique des concentrations de gaz

Reference number
ISO 10396:1993(E)

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.

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.

International Standard ISO 10396 was prepared by Technical Committee ISO/TC 146, *Air quality*, Sub-Committee SC 1, *Stationary source emissions*.

Annex A of this International Standard is for information only.

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Stationary source emissions — Sampling for the automated determination of gas concentrations

1 Scope

1.1 General

This International Standard specifies procedures and equipment that will permit, within certain limits, representative sampling for the automated determination of gas concentrations of effluent gas streams. The application is limited to the determination of oxygen (O_2), carbon dioxide (CO_2), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen monoxide (NO) and nitrogen dioxide (NO_2). Although they are only mentioned briefly in this International Standard, detailed velocity measurements are required to determine the mass flow rates of gases.

1.2 Limitations

It is recognized that there are some combustion processes and situations that may limit the applicability of this International Standard. Where such conditions exist, caution and competent technical judgment are required, especially when dealing with any of the following:

a) corrosive or highly reactive components;

b) high vacuum, high pressure or high temperature gas streams;

c) wet flue gases;

d) fluctuations in velocity, temperature or concentration due to uncontrollable variation in the process;

e) gas stratification due to the non-mixing of gas streams;

f) measurements made using environmental control devices;

g) low levels of gas concentrations.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7934:1989, *Stationary source emissions — Determination of the mass concentration of sulfur dioxide — Hydrogen peroxide/barium perchlorate/Thorin method.*

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

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 condensable material: Moisture that is considered in the sample conditioning equipment.

3.2 corrosiveness: The tendency of an enclosed gas stream to attack sampling equipment components or other exposed surfaces under sampling conditions.

3.3 gaseous concentrations: The mass of a particular gas per unit volume of dry gas in the enclosed gas stream, unless otherwise stated.

If expressed by volume, these concentrations could be standardized by using a reference excess air level (for example: 3 % oxygen).