BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

स्थिर स्रोत उत्सर्जन — रासायनिक अवशोषण द्वारा फ़्लू गैस में पारे की स्पीशीज के निर्धारण और नमूना लेने की पद्धतियाँ

Draft Indian Standard

Stationary Source Emissions —Chemical Absorption Method for Sampling and Determining Mercury Species in Flue Gas

ICS 13.040.30

Air Quality Sectional Committee, CHD 35	Last Date for Comments: 13-01-2025

Air Quality Sectional Committee, CHD 35

NATIONAL FOREWORD

(Formal clause will be added later)

Mercury is a highly toxic environmental pollutant that bioaccumulates in the food chain and can have an impact on neurological health. Most of the anthropogenic mercury is emitted from stationary sources such as coal combustion plants, cement kilns, non-ferrous metal smelting operations, and waste incineration facilities. The monitoring and control of mercury mass emissions from stationary sources is increasingly important for preventing global environmental pollution and health damage caused by mercury.

This standard specifies a method for the sampling and determining mercury species in flue gas passing through ducts or chimney stacks. Mercury generally exists in gaseous elemental form, gaseous oxidized form and particulate-bound form. This method applies to the sampling and determination of gaseous elemental mercury (Hg0), gaseous oxidized mercury (Hg2+), particulate-bound mercury (HgP) and total mercury (HgT) in the flue gas from stationary sources.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions and terminologies are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words `International Standard' appear referring to this standard, they should be read as `Indian Standard'.

b) Comma (,) has been used as a decimal marker in the International Standard, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their places, are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 10396 Stationary source emissions — Sampling for the automated determination of gas emission concentrations for permanently-installed monitoring systems	IS 17133 : 2019 Sampling from Stationary Sources for Automated Determination of Gas Emission Concentration Using Permanently Installed Monitoring Systems	Identical With ISO 10396 :2007

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard.

International Standard No	*Title*
ISO 3696:1987	Water for analytical laboratory use — Specification and test methods
ISO 9096:2017	Stationary source emissions — Manual determination of mass concentration of particulate matter
ISO 10780 : 1994	Stationary source emissions — Measurement of velocity and volume flowrate of gas streams in ducts
ISO 12141	Stationary source emissions — Determination of mass concentration of particulate matter (dust) at low concentrations — Manual gravimetric method
ISO 12846:2012	Water quality — Determination of mercury — Method using atomic absorption spectrometry (AAS) with and without enrichment
ISO 17852:2006	Water quality — Determination of mercury — Method using atomic fluorescence spectrometry
ISO 20988 : 2007	Air quality — Guidelines for estimating measurement uncertainty
IS 21741 : 2020	Stationary source emissions — Sampling and determination of mercury compounds in flue gas using gold amalgamation trap

In this adopted standard, reference appears to certain International Standards where the standard atmospheric conditions to be observed are stipulated which are not applicable to tropical/subtropical countries. The applicable standard atmospheric conditions for Indian conditions are 27 ℃ ± 2°C and (65 ± 5) percent, relative humidity and shall be observed while using this standard.

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2: 2022 ‘Rules for rounding off numerical values (*second revision*)’

FOR COMPLETE TEXT OF THE DOCUMENT, KINDLY REFER ISO 5409: 2024

Note: The technical content of the document has not been enclosed as these are identical with the corresponding ISO Standard. For obtaining the copy of the complete ISO Standard, please contact:

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